

AUG 8 1986

URANIUM MILL TAILINGS RECLAMATION ACT OF  
1985

ORIGINAL JOINT HEARING

BEFORE THE  
SUBCOMMITTEE ON  
ENERGY AND THE ENVIRONMENT  
OF THE  
COMMITTEE ON  
INTERIOR AND INSULAR AFFAIRS  
HOUSE OF REPRESENTATIVES  
AND THE  
SUBCOMMITTEE ON  
ENERGY RESEARCH AND DEVELOPMENT  
OF THE  
COMMITTEE ON  
ENERGY AND NATURAL RESOURCES  
UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 2236

TO PROVIDE FOR THE FINANCING OF RECLAMATION AND OTHER REMEDIAL ACTIONS WITH  
RESPECT TO MILL TAILINGS AT ACTIVE URANIUM AND THORIUM PROCESSING SITES

S. 1004

TO AUTHORIZE AND DIRECT THE SECRETARY OF ENERGY TO ESTABLISH A PROGRAM TO PROVIDE  
FOR RECLAMATION AND OTHER REMEDIAL ACTIONS WITH RESPECT TO MILL TAILINGS AT  
ACTIVE URANIUM AND THORIUM PROCESSING SITES

HEARING HELD IN WASHINGTON, DC

JULY 16, 1985

Serial No. JH1

Printed for the use of the Committee on Interior and Insular Affairs

U.S. GOVERNMENT PRINTING OFFICE

60-231 O

WASHINGTON : 1986

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## URANIUM MILL TAILINGS RECLAMATION ACT OF 1985

TUESDAY, JULY 16, 1985

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON ENERGY  
AND THE ENVIRONMENT, COMMITTEE ON INTERIOR AND  
INSULAR AFFAIRS AND U.S. SENATE, SUBCOMMITTEE ON  
ENERGY RESEARCH AND DEVELOPMENT, COMMITTEE ON  
ENERGY AND NATURAL RESOURCES,

*Washington, DC.*

The subcommittees met at 10:45 a.m., in room 1324, Longworth House Office Building; Hon. Morris K. Udall (chairman of the Subcommittee on Energy and the Environment) presiding.

The CHAIRMAN. This is a joint hearing this morning of two subcommittees, the Subcommittee on Energy and the Environment of the House Interior Committee and the Senate Subcommittee on Energy Research and Development of the Senate Committee on Energy and Natural Resources.

The Senate subcommittee is chaired by my good friend Senator Domenici.

We are focusing today on one of the aspects of the nuclear fuel cycle that has had attention in our committee before, and that is the disposition and safekeeping of uranium mill tailings.

I talked to Senator Domenici and Congressmen Richardson and Lujan and others earlier in the year, and we felt it would be useful and save time if we addressed this problem through a joint hearing of this kind.

The hearing will be, from the House side, on H.R. 2236, Mr. Richardson's bill, and on the Senate side S. 1004, introduced by Senator Domenici. Both are similar bills and would establish a new system to finance uranium mill tailings reclamation at active sites which are not targeted for cleanup under the remedial action program established by the original Uranium Mill Tailings Radiation Control Act.

We are anxious to hear from today's witnesses—from industry representatives, from the administration, and from State and local officials, including the Governor of New Mexico. I hope from this hearing perhaps will come a consensus or foundation for building on legislation.

With that, I will defer to my cochair for the day and my colleague, Senator Domenici.

Mr. DOMENICI. Thank you very much, Chairman Udall.

First of all, let me say I think this is an excellent way to conduct a hearing. My subcommittee and your subcommittee will be able to

conduct this business without us having a set of hearings and you having a set of hearings. The Members of the House and Senate have a lot to do. Hopefully most of the testimony can be obtained here today jointly and from that we can work our respective bills.

On S. 1004, Chairman Udall, I want to add that my cosponsor is my good friend from New Mexico, Senator Bingaman. We have other cosponsors on our side.

I want to thank you again for agreeing to hold these joint hearings. This obviously is an important bill for the people of those States like my own where you can mine uranium. Many of those who are unemployed look to this bill, which sets up a program for the cleanup of active uranium mill tailings piles, as a way of returning to work, but equally or even more important obviously, is the fact that we must clean them up and we must find the resources to do it.

I want to say one thing about that. I still believe that it is a vital and terrible mistake for our Federal Government to let this industry die. It is a mistake for the utilities to let this industry die, and it is a mistake to become overly dependent on foreign sources of uranium which are subsidized by their governments.

I will continue to try, and many around this hearing table have already joined in that effort, to correct this mistake.

I am not going to let the fund that we are seeking to establish for the cleanup of mill tailings become a burial fund for the domestic industry. I don't think it should be that. Clearly we have a serious responsibility to take a look at why we will soon have no domestic industry.

I am pleased to be here and will be to be with you, Mr. Chairman, for the remainder of the morning and early afternoon if it takes that long.

I yield back to the Chairman.

The CHAIRMAN. Mr. Lujan, do you have an opening statement?

Mr. LUJAN. Yes; I do, Mr. Chairman. Thank you very much.

I want to thank you, first of all, for holding these joint hearings on these two bills to try to solve a major problem in the uranium milling industry.

H.R. 2236, the proposed Uranium Mill Tailings Reclamation Act of 1985, is intended to facilitate the cleanup of 32 uranium mill sites which were not covered by the 1978 UMTRCA, the Uranium Mill Tailings Radiation Control Act.

When we passed that bill in 1978 we provided that no money spent under that act could be used to clean up the tailings sites of uranium processing facilities that were active at that time. Unfortunately, the Congress did not foresee in 1978 that the uranium milling industry was on the brink of an almost total collapse, but shortly thereafter mills began closing one right after the other. The industry faced a downward plunge in uranium prices and the end result has been the closure of 29 of the 32 mill operations.

Most of the licensees were unable to include future site cleanup costs in their budget because 95 percent of those tailings were produced under contracts entered into before the implementation of the 1978 act.

The end result is an accumulation of over 160 million tons of uranium mill tailings, posing a possible health hazard to our population.

I am told that most of the licensees can't afford to go into the cost of cleaning the tailings up in accordance with the strict standards promoted by EPA in 1978. The legislation we are considering today would have the Department of Energy operate a cleanup program funded by the uranium mill tailings fund.

Incidentally, that has been a system that we have been using in other nuclear type facilities.

Thirty percent of the cleanup costs paid for out of the fund would be borne by the Federal Government, because 30 percent of the milling was done for the Federal Government; 55 percent would be borne by those utilities using nuclear power; and finally, the licensees would pay the remaining 15 percent.

Mr. Chairman, this is a serious problem and I won't pretend there are not a lot of questions that need to be answered before we move forward on these bills.

We have a full complement of witnesses before us today, and I will end my remarks so that we can get on with the testimony.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

The gentleman from New Mexico, Mr. Richardson, was instrumental in getting these hearings under way and he will be taking my place as the House cochair when I leave in a while. But I will be back as soon as I can.

Mr. Richardson.

Mr. RICHARDSON. Thank you, Mr. Chairman. My comments will be very brief.

There has been an extraordinary amount of cooperation between both bodies, between the New Mexico delegation, between Western representatives who have this problem, and between many other groups that are vitally affected by this issue.

I especially want to compliment my colleague from New Mexico, Congressman Lujan, who has been extremely helpful as we look at the whole issue of keeping the uranium industry alive, whether it is in the definition of viability, whether it is successfully getting an amendment passed to the foreign aid bill that bans the imports of coal and uranium from South Africa, or whether it is other necessary import restrictions.

I am not talking about protectionism; I am talking about fair trade and ensuring that this vital industry does not die and also ensuring that our Government, the DOE and the NRC deal effectively with the issue of uranium and recognize that we have got some serious problems.

The Governor of New Mexico, Senator Bingaman, and especially Senator Domenici on the Republican side, have been extremely valued partners in this effort.

I think it is extraordinary that we are having this joint hearing. My colleague from New Mexico, Senator Domenici, has had long experience with this issue. I look forward to working with him and I look forward to working with other Members of Congress that are here, Congressman Murphy, who has a tremendous amount of energy in his area and has been very sensitive; Congressman



Strang, Senator Hecht, Congressman Darden. This is a cooperative effort. We are here to listen.

I know from the early reading of the legislation by some of the utilities and the Navajo Tribe and some of the others vitally affected by this issue there are some concerns about our bill relating to the proportion of cost sharing. I think we are ready to work with everybody. Our objective is to get this bill passed but in cooperative way.

So I want to thank you, Chairman Udall, once again for listening, for being there, and for holding these hearings.

[EDITOR'S NOTE.—Prepared statement of Hon. Bill Richardson may be found in the appendix. See table of contents for page number].

The CHAIRMAN. Does the distinguished Senator from Nevada have an opening statement?

Mr. HECHT. Thank you, Mr. Chairman. I am glad to be here today. While my home State of Nevada does not have any uranium mill tailings problems, many companies who operate in my State have problems elsewhere.

I look forward to working with my colleagues on resolving this issue in the future.

Thank you very much.

The CHAIRMAN. The junior Senator from New Mexico, Mr. Bingaman.

Mr. BINGAMAN. Thank you, Mr. Chairman.

Let me just put my statement in the record, if I could, and again thank you and Senator Domenicic for having this joint hearing. I think it is a good way to deal with this important issue.

The uranium industry in our State is in desperate straits. We have gone from about 7,700 employees 5 years ago to 150 today working in the uranium industry.

I think clearly that some kind of mechanism such as is proposed here is necessary in order to deal with this problem of mill tailings, and I am glad to be a cosponsor of the bill with Senator Domenicic and I thank you for having the hearings.

[EDITOR'S NOTE.—Prepared statement of Hon. Jeff Bingaman may be found in the appendix. See table of contents for page number].

The CHAIRMAN. Does any other Member of the House or the Senate have an opening statement?

The gentleman from Colorado.

Mr. STRANG. Mr. Chairman, I would like to compliment my colleagues, Mr. Richardson and Senator Domenicic, for bringing this legislation forth. I am happy to cosponsor it.

We have a dreadful problem in Colorado and I hope this provides us with an opportunity to get some of these things resolved.

I would like permission to revise and extend.

The CHAIRMAN. Without objection.

Mr. STRANG. Thank you.

The CHAIRMAN. Before proceeding to our first witness, and without objection, let us have printed at this point in the hearing record, a copy of the bills, H.R. 2236 and S. 1004.

[The bills H.R. 2236 and S. 1004 follow:]



99TH CONGRESS  
1ST SESSION

# H. R. 2236

To provide for the financing of reclamation and other remedial actions with respect to mill tailings at active uranium and thorium processing sites.

---

## IN THE HOUSE OF REPRESENTATIVES

APRIL 25, 1985

Mr. RICHARDSON introduced the following bill; which was referred jointly to the Committees on Interior and Insular Affairs and Energy and Commerce

---

## A BILL

To provide for the financing of reclamation and other remedial actions with respect to mill tailings at active uranium and thorium processing sites.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Uranium Mill Tailings  
5 Reclamation Act of 1985".

6 **SEC. 2. FINDINGS AND PURPOSE.**

7 (a) **FINDINGS.**—The Congress finds that—

8 (1) the Uranium Mill Tailings Radiation Control  
9 Act of 1978 (42 U.S.C. 7901 et seq.) was enacted to

1 provide for the reclamation and regulation of uranium  
2 mill tailings;

3 (2) the Uranium Mill Tailings Radiation Control  
4 Act of 1978 (42 U.S.C. 7901 et seq.) did not provide  
5 for a comprehensive method of financing reclamation  
6 and remedial action at active uranium and thorium  
7 processing sites; and

8 (3) the creation of an assured system of financing  
9 will greatly facilitate the reclamation and remedial ac-  
10 tions at such active uranium and thorium processing  
11 sites.

12 (b) PURPOSE.—It is the purpose of this Act—

13 (1) to facilitate the reclamation and other remedial  
14 actions at active uranium and thorium processing sites;

15 (2) to establish a comprehensive system for financ-  
16 ing reclamation and other remedial actions at such  
17 sites; and

18 (3) to allocate the costs of such comprehensive  
19 system of financing fairly and equitably.

20 **SEC. 3. REMEDIAL ACTION PERFORMED BY SECRETARY.**

21 (a) IN GENERAL.—The Secretary of Energy, or such  
22 person as the Secretary may by mutual agreement designate  
23 (including the State in which the active site is located, or the  
24 owner or licensee of the active site for which reclamation,  
25 decommissioning, other remedial actions, and long-term

1 maintenance and monitoring is to be performed) shall, except  
2 as provided in section 4, select and perform reclamation, de-  
3 commissioning, other remedial actions, and long-term main-  
4 tenance and monitoring at active sites (as defined in section  
5 10(1)).

6 (b) APPLICABLE STANDARDS FOR REMEDIAL  
7 ACTION.—Reclamation, decommissioning, other remedial  
8 action, and long-term maintenance and monitoring performed  
9 by the Secretary or the designee of the Secretary under this  
10 section shall—

11 (1) comply with standards pertaining to such rec-  
12 lamation, decommissioning, other remedial actions, or  
13 long-term maintenance and monitoring prescribed by  
14 the Administrator of the Environmental Protection  
15 Agency under section 275 b. of the Atomic Energy  
16 Act of 1954 (42 U.S.C. 2022(b));

17 (2) comply with any applicable requirements im-  
18 posed by the Nuclear Regulatory Commission (or, if  
19 appropriate, by a State that is a party to a discontinu-  
20 ance agreement under section 274 of the Atomic  
21 Energy Act of 1954 (42 U.S.C. 2021)); and

22 (3) be undertaken in consultation, as appropriate,  
23 with the State in which such active site is located, and  
24 in the case of Indian lands, the appropriate Indian  
25 tribe and the Secretary of the Interior.

1 (c) CONSENT OF PROCESSING SITE OWNER.—Unless  
2 the Commission determines that a permanent cessation of op-  
3 erations leading to the production of byproduct material has  
4 occurred at any active site, the Secretary or the designee of  
5 the Secretary shall commence actual reclamation and decom-  
6 missioning activities only with the consent of the owner of  
7 the active site in question.

8 (d) CONTRACTS WITH OWNERS OR LICENSEES.—The  
9 Secretary may enter into a contract with the owner or licens-  
10 ee of an active site for any reclamation, decommissioning,  
11 other remedial action, or long-term maintenance and moni-  
12 toring associated with that active site.

13 (e) TRANSFER OF LICENSES AND TITLE TO BYPROD-  
14 UCT MATERIAL.—Not later than the date on which the Sec-  
15 retary or the designee of the Secretary begins reclamation  
16 and decommissioning activities at an active site, any license  
17 pertaining to byproduct material at such site shall be trans-  
18 ferred to the Secretary and ownership of such byproduct ma-  
19 terial and land, including any interests in such byproduct ma-  
20 terial and land that is used for the processing and disposal of  
21 such byproduct material, shall be transferred as provided in  
22 section 83(b) of the Atomic Energy Act of 1954 (42 U.S.C.  
23 2113(b)).

24 (f) COSTS OF REMEDIAL ACTION.—The costs for recla-  
25 mation, decommissioning, other remedial action, and long-

1 term maintenance and monitoring performed by the Secre-  
2 tary or the designee of the Secretary under this Act shall be  
3 paid from the Uranium Mill Tailings Fund established in sec-  
4 tion 8.

5 **SEC. 4. REMEDIAL ACTION PERFORMED BY OWNERS OR LI-**  
6 **CENSEES.**

7 (a) **IN GENERAL.**—Notwithstanding section 3, an  
8 owner or licensee of an active site initially licensed after the  
9 effective date of this Act, may elect (in lieu of the Secretary)  
10 to select and to perform reclamation, decommissioning, or  
11 other remedial action at such active site.

12 (b) **APPLICABLE STANDARDS FOR REMEDIAL**  
13 **ACTION.**—Any reclamation, decommissioning, or other re-  
14 medial action performed under subsection (a) by an owner or  
15 a licensee shall be performed in accordance with applicable  
16 general standards and requirements promulgated by the Ad-  
17 ministrator and the Commission (or, if appropriate, by a State  
18 that is party to a discontinuance agreement under section  
19 274 of the Atomic Energy Act of 1954 (42 U.S.C. 2021)).

20 **SEC. 5. REIMBURSEMENT OF COSTS.**

21 (a) **IN GENERAL.**—The Secretary shall, subject to sub-  
22 section (b), provide for reimbursement of costs, as determined  
23 by the Secretary, of any reclamation, decommissioning, other  
24 remedial action, and long-term maintenance and monitoring

1 performed in connection with a site to which section 3 is  
2 applicable.

3 (b) LIMITATIONS.—

4 (1) Any reimbursement provided under subsection  
5 (a) shall be made—

6 (A) only to the licensee or to a property  
7 owner of record at the time such remedial action  
8 was undertaken; and

9 (B) only with respect to costs incurred by  
10 such licensee or property owner.

11 (2) No reimbursement for actual costs of reclama-  
12 tion, decommissioning, other remedial action, and long-  
13 term maintenance and monitoring may be made unless  
14 the Secretary determines that such reclamation, de-  
15 commissioning, other remedial action, and long-term  
16 maintenance and monitoring contributes to compliance  
17 with the standards established by the Administrator  
18 under section 275 b. of the Atomic Energy Act of  
19 1954 (42 U.S.C. 2022(b)), and the Commission (or, if  
20 appropriate, by a State that is a party to a discontinu-  
21 ance agreement under section 274 of the Atomic  
22 Energy Act of 1954 (42 U.S.C. 2021)).

1 SEC. 6. CONTRACT AUTHORITY FOR REMEDIAL ACTION FOR  
2 URANIUM AND THORIUM MILLS INITIALLY LI-  
3 CENSED AFTER EFFECTIVE DATE.

4 (a) IN GENERAL.—The Secretary may enter into con-  
5 tracts with owners or licensees of uranium or thorium mills  
6 initially licensed after the effective date of this Act to provide  
7 for the Secretary or the designee of the Secretary to perform  
8 reclamation, decommissioning, and other remedial action at  
9 such site.

10 (b) REIMBURSEMENT FOR COSTS OF REMEDIAL  
11 ACTION.—Each contract entered into under subsection (a)  
12 shall provide that the owner or licensee of the site for which  
13 the Secretary or the designee of the Secretary performs rec-  
14 lamation, decommissioning, and other remedial action shall  
15 reimburse the Tailings Fund for all reasonable costs associat-  
16 ed with the activities of the Secretary or the designee of the  
17 Secretary under the contract.

18 SEC. 7. CONTRACTS FOR PURCHASE OR SALE OF URANIUM OR  
19 THORIUM TO INCLUDE REMEDIAL ACTION  
20 FUNDING PROVISIONS.

21 Contracts for the purchase or sale of uranium or thori-  
22 um entered into after the effective date of this Act shall in-  
23 clude provisions for the cost of reclamation, decommissioning,  
24 other remedial action, and long-term maintenance and moni-  
25 toring attributable to uranium and thorium processing activi-



1 ties conducted in the United States after the effective date of  
2 this Act.

3 **SEC. 8. URANIUM MILL TAILINGS FUND.**

4 (a) **ESTABLISHMENT OF TAILINGS FUND.**—There  
5 hereby is established in the Treasury of the United States a  
6 separate fund, to be known as the Uranium Mill Tailings  
7 Fund. The Tailings Fund shall consist of—

8 (1) all contributions, receipts, proceeds, and recov-  
9 eries realized by the Secretary of Energy under sub-  
10 section (c) and section 9, which shall be deposited in  
11 the Tailings Fund immediately upon their realization;  
12 and

13 (2) any appropriations made by the Congress to  
14 the Tailings Fund.

15 (b) **USE OF TAILINGS FUND.**—The Secretary of Energy  
16 may, subject to subsection (c), make expenditures from the  
17 Tailings Fund only for purposes of compliance with this Act,  
18 including expenditures for any reimbursement under section  
19 5.

20 (c) **ADMINISTRATION OF TAILINGS FUND.**—

21 (1) The Secretary of the Treasury, after consulta-  
22 tion with the Secretary of Energy, shall annually  
23 submit to the Congress a report on the financial condi-  
24 tion and operation of the Tailings Fund during the pre-  
25 ceding fiscal year.

1           (2) The Secretary of Energy shall submit the  
2 budget of the Tailings Fund to the Office of Manage-  
3 ment and Budget annually along with the budget of  
4 the Department of Energy submitted at such time in  
5 accordance with chapter 11 of title 31, United States  
6 Code. The budget of the Tailings Fund shall consist of  
7 the estimates made by the Secretary of Energy of ex-  
8 penditures from the Tailings Fund and other relevant  
9 financial matters for the succeeding 3 fiscal years, and  
10 shall be included in the Budget of the United States  
11 Government. The Secretary of Energy may make ex-  
12 penditures from the Tailings Fund in such amounts as  
13 approved in advance in appropriation Acts.

14           (3) If the Secretary of Energy determines that the  
15 Tailings Fund contains at any time amounts in excess  
16 of current needs, the Secretary of Energy may request  
17 the Secretary of the Treasury to invest such amounts,  
18 or any portion of such amounts as the Secretary of  
19 Energy determines to be appropriate, in obligations of  
20 the United States—

21           (A) having maturities determined by the Sec-  
22 retary of the Treasury to be appropriate to the  
23 needs of the Tailings Fund; and

24           (B) bearing interest at rates determined to be  
25 appropriate by the Secretary of the Treasury.

1 taking into consideration the current average  
2 market yield on outstanding marketable obliga-  
3 tions of the United States with remaining periods  
4 to maturity comparable to the maturities of such  
5 investments, except that the interest rate on such  
6 investments shall not exceed the average interest  
7 rate applicable to existing borrowings.

8 (4) Receipts, proceeds, and recoveries realized by  
9 the Secretary of Energy under this section, and ex-  
10 penditures of amounts from the Tailings Fund, shall be  
11 exempt from annual apportionment under the provi-  
12 sions of subchapter II of chapter 15 of title 31, United  
13 States Code.

14 (5) If at any time the moneys available in the  
15 Tailings Fund are insufficient to enable the Secretary  
16 of Energy to discharge the responsibilities of the Sec-  
17 retary under this section, the Secretary of Energy shall  
18 issue to the Secretary of the Treasury obligations in  
19 such forms and denominations, bearing such maturities,  
20 and subject to such terms and conditions as may be  
21 agreed to by the Secretary of Energy and the Secre-  
22 tary of the Treasury. The total of such obligations shall  
23 not exceed amounts provided in appropriation Acts.  
24 Redemption of such obligations shall be made by the  
25 Secretary of Energy from moneys available in the Tail-

ings Fund. Such obligations shall bear interest at a rate determined by the Secretary of the Treasury, and shall be not less than a rate determined by taking into consideration the average market yield on outstanding marketable obligations of the United States of comparable maturities during the month preceding the issuance of the obligations under this paragraph. The Secretary of the Treasury shall purchase any issued obligations, and for such purpose the Secretary of the Treasury is authorized to use as a public debt transaction the proceeds from the sale of any securities issued under chapter 31 of title 31, United States Code, and the purposes for which securities may be issued under such chapter are extended to include any purchase of such obligations. The Secretary of the Treasury may at any time sell any of the obligations acquired by him under this paragraph. All redemptions, purchases, and sales by the Secretary of the Treasury of obligations under this paragraph shall be treated as public debt transactions of the United States.

**SEC. 9. RESPONSIBILITY FOR COSTS FOR REMEDIAL ACTION.**

**(a) COSTS ASSOCIATED WITH URANIUM AND THORIUM PROCESSING ACTIVITIES BEFORE EFFECTIVE DATE.—**

The costs for reclamation, decommissioning, other remedial action, and long-term maintenance and monitoring activities,

1 undertaken by the Secretary or the designee of the Secretary  
2 under section 3, associated with uranium and thorium proc-  
3 essing activities before the effective date of this Act shall be  
4 shared by—

5 (1) the owners or licensees of pertinent active  
6 sites, as provided in subsection (c);

7 (2) the Federal Government, as provided in sub-  
8 section (d); and

9 (3) persons using source material or special nucle-  
10 ar material for a civilian nuclear power reactor to gen-  
11 erate electrical energy, as provided in subsection (e).

12 (b) CALCULATION OF COST FOR REMEDIAL ACTION  
13 FOR PROCESSING ACTIVITIES CONDUCTED BEFORE EF-  
14 FECTIVE DATE.—

15 (1) The costs of reclamation, decommissioning,  
16 other remedial action, and long-term maintenance and  
17 monitoring activities that are attributable to uranium or  
18 thorium milling operations before the effective date of  
19 this Act shall be the total costs multiplied by a fraction  
20 with—

21 (A) a numerator comprised of the total dry  
22 tons of tailings attributable to the site but gener-  
23 ated prior to the effective date of this Act; and

24 (B) a denominator comprised of the total dry  
25 tons of tailings attributable to the site, ending on

1 the date that the reclamation, decommissioning,  
2 or other remedial action is initiated.

3 (2) The Secretary may promulgate regulations re-  
4 lating to the calculation of the fractions specified in  
5 paragraph (1), and may require reasonable information  
6 submissions from the owners or licensees of the urani-  
7 um or thorium processing sites concerning such calcu-  
8 lations.

9 (c) SHARE OF COSTS OF OWNERS OR LICENSEES.—

10 (1) For uranium or thorium processing sites ini-  
11 tially licensed before the effective date of this Act, the  
12 licensee or owner of each uranium or thorium site for  
13 which reclamation, decommissioning, other remedial  
14 action, and long-term maintenance and monitoring is  
15 performed by the Secretary or the designee of the Sec-  
16 retary shall pay to the Treasury of the United States,  
17 to be deposited in the Tailings Fund, an amount equal  
18 to—

19 (A) 15 percent of the cost determined under  
20 subsection (b); and

21 (B) 100 percent of the cost of such activities  
22 associated with uranium or thorium milling activi-  
23 ties on or after the effective date of this Act.

24 (2) For uranium or thorium processing sites ini-  
25 tially licensed on or after the effective date of this Act,

1 and for which the Secretary or the designee of the  
2 Secretary performs reclamation, decommissioning,  
3 other remedial action, and long-term maintenance and  
4 monitoring, the owner or licensee of such uranium or  
5 thorium processing site shall pay to the Treasury of  
6 the United States, to be deposited in the Tailings  
7 Fund, an amount equal to 100 percent of the cost for  
8 such activities.

9 (3) All payments by licensees or owners under  
10 this section shall be made on an annual basis for reclama-  
11 tion, decommissioning and remedial action undertak-  
12 en during each preceding 1-year period beginning on  
13 the effective date of this Act, in accordance with regu-  
14 lations promulgated by the Secretary. Payments by li-  
15 censees or owners for long-term maintenance and mon-  
16 itoring shall be paid no later than the date on which  
17 reclamation and decommissioning of the active site is  
18 completed.

19 (d) SHARE OF COSTS OF FEDERAL GOVERNMENT.—In  
20 recognition that some active sites contain tailings which have  
21 resulted from ore processing to extract uranium and thorium  
22 under contract with the United States for use primarily in  
23 defense programs, the Federal Government shall pay into the  
24 Tailings Fund an amount equal to 30 percent of the costs,  
25 determined under subsection (b), incurred during each 1-year

1 period beginning on the effective date of this Act for reclama-  
2 tion, decommissioning, other remedial action, and long-term  
3 maintenance and monitoring activities undertaken by the  
4 Secretary or the designee of the Secretary associated with  
5 uranium and thorium processing activities prior to the effec-  
6 tive date of this Act.

7 (c) SHARE OF COSTS OF UTILITIES.—

8 (1) Persons using source material or special nucle-  
9 ar material for a civilian nuclear power reactor to gen-  
10 erate electrical energy shall enter into agreements with  
11 the Secretary to pay a fee, as provided in paragraph  
12 (2), to offset 55 percent of the costs, determined under  
13 subsection (b), incurred during each 1-year period be-  
14 ginning on the effective date of this Act, for reclama-  
15 tion, decommissioning, other remedial action, and long-  
16 term maintenance and monitoring activities undertaken  
17 by the Secretary or the designee of the Secretary asso-  
18 ciated with uranium or thorium processing activities  
19 prior to the effective date of this Act.

20 (2) For electricity generated by a civilian nuclear  
21 power reactor and sold on or after the effective date of  
22 this Act, the fee described in paragraph (1) shall be  
23 equal to 0.15 mil per kilowatt-hour. Such fee shall be  
24 paid to the Treasury of the United States and shall be  
25 deposited in the Tailings Fund.



1           (3)(A) Not later than 120 days after the effective  
2       date of this Act the Secretary shall establish proce-  
3       dures for the collection and payment of the fee estab-  
4       lished by paragraph (1). The Secretary shall annually  
5       review the amount of such fee to evaluate whether col-  
6       lection of the fee, contribution by the owner or licens-  
7       ee, and the payments of the United States, will provide  
8       sufficient revenues to offset the costs experienced and  
9       expected for reclamation, decommissioning, other reme-  
10      dial action, and long-term maintenance and monitoring  
11      activities undertaken by the Secretary or the designee  
12      of the Secretary. In the event the Secretary deter-  
13      mines that either insufficient or excess revenues are  
14      being collected, the Secretary shall, in order to recover  
15      the costs incurred by the Federal Government for rec-  
16      lamation, decommissioning, other remedial action, and  
17      long-term maintenance and monitoring, propose an ad-  
18      justment to the fee established in paragraph (1) to  
19      ensure full funding. The Secretary shall immediately  
20      transmit this proposal for such an adjustment to the  
21      Congress. The adjustment to the fee proposed by the  
22      Secretary shall be effective after a period of 120 days  
23      of continuous session of the Congress have elapsed fol-  
24      lowing the receipt of such transmittal unless during

1 such 120-day period there is enacted into law a provi-  
2 sion disapproving such adjustment.

3 (B) For purposes of the 120-day period described  
4 in subparagraph (A)—

5 (i) continuity of session of the Congress is  
6 broken only by an adjournment sine die; and

7 (ii) the days on which either House is not in  
8 session because of an adjournment of more than 3  
9 days to a day certain are excluded in the compu-  
10 tation of the 120-day period.

11 (4) The Commission shall not issue or renew a li-  
12 cense to any person to use a utilization or production  
13 facility under the authority of section 103 of the  
14 Atomic Energy Act of 1954 (42 U.S.C. 2133) or to  
15 use special nuclear material at such a facility unless  
16 such person has entered into an agreement with the  
17 Secretary under this section.

18 (f) LIMITATION ON FINANCIAL OBLIGATION OF  
19 ACTIVE SITE OWNERS AND UTILITIES.—Except for the  
20 payment of the fee and contributions provided in this section,  
21 the Federal Government may not impose any further finan-  
22 cial obligation on persons using source material or special  
23 nuclear material for a civilian nuclear power reactor to gen-  
24 erate electrical energy, or on owners or licensees of uranium  
25 or thorium processing sites, for reclamation, decommission-

1 ing, other remedial action and long-term maintenance and  
2 monitoring associated with active sites.

3 SEC. 10. DEFINITIONS.

4 For purposes of this Act:

5 (1) The terms "active uranium or thorium proc-  
6 essing site" and "active site" mean—

7 (A) any uranium or thorium processing site,  
8 including the mill, containing byproduct material  
9 for which a license (issued by the Nuclear Regula-  
10 tory Commission or its predecessor agency under  
11 the Atomic Energy Act of 1954 (42 U.S.C. 2011  
12 et seq.), or by a State as permitted under section  
13 274 of such Act (42 U.S.C. 2021)) for the pro-  
14 duction at such site of any uranium or thorium de-  
15 rived from ore—

16 (i) is in effect on January 1, 1978;

17 (ii) is issued or renewed after January  
18 1, 1978; or

19 (iii) for which an application for renewal  
20 or issuance is pending on, or after, January  
21 1, 1978; and

22 (B) any other real property or improvement  
23 on such real property that—

24 (i) is in the vicinity of such site; and

1 (ii) is determined by the Secretary, in  
2 consultation with the Commission, to be con-  
3 taminated with residual byproduct material.

4 (z) The term "Administrator" means the Adminis-  
5 trator of the Environmental Protection Agency.

6 (3) The term "byproduct material" has the mean-  
7 ing given such term in section 11 e. (2) of the Atomic  
8 Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

9 (4) The term "civilian nuclear power reactor"  
10 means any civilian nuclear powerplant required to be  
11 licensed under section 103 of the Atomic Energy Act  
12 of 1954 (42 U.S.C. 2133).

13 (5) The term "Commission" means the Nuclear  
14 Regulatory Commission.

15 (6) The term "Indian tribe" means any tribe,  
16 band, clan, group, pueblo, or community of Indians  
17 recognized as eligible for services provided by the Sec-  
18 retary of the Interior to Indians.

19 (7) The term "Secretary" means the Secretary of  
20 Energy.

21 (8) The terms "source material" and "special nu-  
22 clear material" have the meanings given such terms in  
23 section 11 of the Atomic Energy Act of 1954 (42  
24 U.S.C. 2014).

1           (9) The term "tailings" means the wastes pro-  
2       duced by the extraction or concentration of uranium or  
3       thorium from any ore processed primarily for its source  
4       material content.

5           (10) The term "Tailings Fund" means the Urani-  
6       um Mill Tailings Fund established in section 8.

7       SEC. 11. TECHNICAL AND CONFORMING AMENDMENTS TO THE  
8                           ATOMIC ENERGY ACT OF 1954.

9           (a) OWNERSHIP AND CUSTODY OF CERTAIN BYPROD-  
10       UCT MATERIAL AND DISPOSAL SITES.—

11           (1) Section 83 a. (1) of the Atomic Energy Act of  
12       1954 (42 U.S.C. 2113(a)(1)) is amended by inserting  
13       before "the licensee" the following: "the Secretary of  
14       Energy will be in a position to, or, as appropriate,".

15           (2) Section 83(b)(5) of the Atomic Energy Act of  
16       1954 (42 U.S.C. 2113(b)(5)) is amended by striking out  
17       the last sentence.

18           (b) STANDARDS AND INSTRUCTIONS FOR BONDING,  
19       SURETY, OR OTHER FINANCIAL ARRANGEMENTS, INCLUD-  
20       ING PERFORMANCE BONDS.—Section 161 x. of the Atomic  
21       Energy Act of 1954 (42 U.S.C. 2201(x)) is amended by in-  
22       serting after "ensure" in the matter preceding paragraph (1)  
23       the following: " , for the share of costs for which the licensee  
24       is responsible".

## 1 SEC. 12. AUTHORIZATION OF APPROPRIATIONS.

2 There is authorized to be appropriated to the Uranium  
3 Mill Tailings Fund \$290,000,000. Appropriations made pur-  
4 suant to this section shall remain available until expended.

## 5 SEC. 13. LIMITATION ON SPENDING AUTHORITY.

6 The authority under this Act to incur indebtedness, or  
7 enter into contracts, obligating amounts to be expended by  
8 the Federal Government shall be effective for any fiscal year  
9 only to such extent or in such amounts as are provided in  
10 advance by appropriation Acts.

## 11 SEC. 14. EFFECTIVE DATE.

12 The provisions of and amendments made by this Act  
13 shall become effective upon the expiration of the 60-day  
14 period following the date of the enactment of this Act.

○

99TH CONGRESS  
1ST SESSION

## S. 1004

To authorize and direct the Secretary of Energy to establish a program to provide for reclamation and other remedial actions with respect to mill tailings at active uranium and thorium processing sites.

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### IN THE SENATE OF THE UNITED STATES

APRIL 25 (legislative day, APRIL 15), 1985

Mr. DOMENICI (for himself, Mr. SIMPSON, Mr. BINGAMAN, and Mr. WALFORD) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

---

## A BILL

To authorize and direct the Secretary of Energy to establish a program to provide for reclamation and other remedial actions with respect to mill tailings at active uranium and thorium processing sites.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 SECTION 1. This Act may be cited as the "Uranium  
4 Mill Tailings Reclamation Act of 1985".

5 FINDINGS AND PURPOSE

6 SEC. 2. (a) FINDINGS.—The Congress finds that—

7 (1) the Uranium Mill Tailings Radiation Control  
8 Act of 1978 (42 U.S.C. 7901 et seq.) was enacted to

1 provide for the reclamation and regulation of uranium  
2 mill tailings;

3 (2) the Uranium Mill Tailings Radiation Control  
4 Act of 1978 (42 U.S.C. 7901 et seq.) did not provide  
5 for a comprehensive method of financing reclamation  
6 and remedial action at active uranium and thorium  
7 processing sites; and

8 (3) the creation of an assured system of financing  
9 will greatly facilitate and expedite reclamation and re-  
10 medial actions at such active uranium and thorium  
11 processing sites.

12 (b) PURPOSE.—It is the purpose of this Act—

13 (1) to facilitate and expedite reclamation and  
14 other remedial actions at active uranium and thorium  
15 processing sites;

16 (2) to establish a comprehensive system for financ-  
17 ing reclamation and other remedial actions at such  
18 sites; and

19 (3) to allocate the costs of such comprehensive  
20 system of financing fairly and equitably.

21 REMEDIAL ACTION PERFORMED BY THE DEPARTMENT OF  
22 ENERGY

23 SEC. 3. (a) IN GENERAL.—The Secretary of Energy, or  
24 such person as the Secretary may, by mutual agreement, des-  
25 ignate (including the State in which the active site is located,  
26 or the owner or licensee of the active site for which reclama-



1 tion, decommissioning, other remedial actions, and long-term  
2 maintenance and monitoring is to be performed) shall, except  
3 as provided in section 4, select and perform reclamation, de-  
4 commissioning, other remedial actions, and long-term main-  
5 tenance and monitoring at active sites (as defined in section  
6 10(1)).

7 (b) APPLICABLE STANDARDS FOR REMEDIAL  
8 ACTION.—Reclamation, decommissioning, other remedial  
9 action, and long-term maintenance and monitoring performed  
10 by the Secretary or the designee of the Secretary under this  
11 section shall—

12 (1) comply with all applicable requirements estab-  
13 lished pursuant to the Uranium Mill Tailings Radiation  
14 Control Act of 1978, as amended, or where appropri-  
15 ate, requirements established by a State that is a party  
16 to a discontinuance agreement under section 274 of the  
17 Atomic Energy Act of 1954 (42 U.S.C. 2021); and

18 (2) be undertaken in consultation, as appropriate,  
19 with the State in which such active site is located, and  
20 in the case of Indian lands, the appropriate Indian  
21 tribe and the Secretary of the Interior.

22 (c) CONSENT OF PROCESSING SITE OWNER.—Unless  
23 the Commission determines that a permanent cessation of op-  
24 erations leading to the production of byproduct material has  
25 occurred at any active site, the Secretary or the designee of

1 the Secretary shall commence actual reclamation and decom-  
2 missioning activities only with the consent of the owner of  
3 the active site in question.

4 (d) **CONTRACTS WITH OWNERS OF LICENSEES.**—The  
5 Secretary may enter into a contract with the owner or  
6 licensee of an active site for any reclamation, decommission-  
7 ing, other remedial action, or long-term maintenance and  
8 monitoring associated with that active site.

9 (e) **TRANSFER OF LICENSES AND TITLE TO BYPROD-**  
10 **UCT MATERIAL.**—Not later than the date on which the Sec-  
11 retary or the designee of the Secretary begins reclamation  
12 and decommissioning activities at an active site, any license  
13 pertaining to byproduct material at such site shall be trans-  
14 ferred to the Secretary and ownership of such byproduct ma-  
15 terial and land including any interests in such byproduct ma-  
16 terial and land that is used for the processing and disposal of  
17 such byproduct material, shall be transferred as provided in  
18 section 83(b) of the Atomic Energy Act of 1954 (42 U.S.C.  
19 2113(b)).

20 (f) **COSTS OF REMEDIAL ACTION TO BE PAID FROM**  
21 **TAILINGS FUND.**—The costs for reclamation, decommission-  
22 ing, other remedial action, and long-term maintenance and  
23 monitoring performed by the Secretary or the designee of the  
24 Secretary under this Act shall be paid from the Uranium Mill  
25 Tailings Fund established in section 8.

## 1           REMEDIAL ACTION PERFORMED BY OWNERS OR

## 2                                           LICENSEES

3           SEC. 4. (a) IN GENERAL.—Notwithstanding section 3,  
4 an owner or licensee of an active site initially licensed after  
5 the effective date of this Act, may elect (in lieu of the Secre-  
6 tary) to select and to perform reclamation, decommissioning,  
7 or other remedial action at such active site.

8           (b) REMEDIAL ACTION TO BE PERFORMED IN AC-  
9 CORDANCE WITH APPLICABLE STANDARDS.—Any recla-  
10 mation, decommissioning, or other remedial action performed  
11 under subsection (a) by an owner or licensee shall comply  
12 with all applicable requirements established pursuant to the  
13 Uranium Mill Tailings Radiation Control Act of 1978, as  
14 amended (or, where appropriate, requirements established by  
15 a State that is a party to a discontinuance agreement under  
16 section 274 of the Atomic Energy Act of 1954 (42 U.S.C.  
17 2021)).

## 18                                           REIMBURSEMENT OF COSTS

19           SEC. 5. (a) IN GENERAL.—The Secretary shall, subject  
20 to subsection (b), provide for reimbursement of costs, as de-  
21 termined by the Secretary, of any reclamation, decommis-  
22 sioning, other remedial action, and long-term maintenance  
23 and monitoring performed in connection with a site to which  
24 section 3 is applicable.

25           (b) LIMITATIONS.—

1 (1) Any reimbursement provided under subsection  
2 (a) shall be made—

3 (A) only to the licensee or to a property  
4 owner of record at the time such remedial action  
5 was undertaken; and

6 (B) only with respect to costs incurred by  
7 such licensee or property owner.

8 (2) No reimbursement for actual costs of reclama-  
9 tion, decommissioning, other remedial action, or long-  
10 term maintenance and monitoring may be made unless  
11 the Secretary, in consultation with the Commission (or,  
12 where appropriate, an agreement State), determines  
13 that such reclamation, decommissioning, other remedial  
14 action, or long-term maintenance and monitoring is  
15 necessary to comply with the requirements established  
16 pursuant to the Uranium Mill Tailings Radiation Con-  
17 trol Act of 1978, as amended (or, where appropriate,  
18 requirements established by a State that is a party to a  
19 discontinuance agreement under section 274 of the  
20 Atomic Energy Act of 1954 (42 U.S.C. 2021)).

21 CONTRACT AUTHORITY FOR REMEDIAL ACTION FOR URA-  
22 NIUM AND THORIUM MILLS INITIALLY LICENSED  
23 AFTER EFFECTIVE DATE

24 SEC. 6. (a) IN GENERAL.—The Secretary may enter  
25 into contracts with owners or licensees of uranium or thorium  
26 mills initially licensed after the effective date of this Act to

1 provide for the Secretary or the designee of the Secretary to  
2 perform reclamation, decommissioning, and other remedial  
3 action at such site.

4 (b) COSTS TO BE PAID BY OWNERS OR LICENSEES.—

5 Each contract entered into under subsection (a) shall provide  
6 that the owner or licensee of the site for which the Secretary  
7 or the designee of the Secretary performs reclamation, de-  
8 commissioning, and other remedial action shall reimburse the  
9 Tailings Fund for all reasonable costs associated with the  
10 activities of the Secretary or the designee of the Secretary  
11 under the contract.

12 CONTRACTS FOR PURCHASE OR SALE OF URANIUM OR  
13 THORIUM TO INCLUDE REMEDIAL ACTION FUNDING  
14 PROVISIONS

15 SEC. 7. Contracts for the purchase or sale of uranium or  
16 thorium entered into after the effective date of this Act shall  
17 include provisions for the cost of reclamation, decommission-  
18 ing, other remedial action, and long-term maintenance and  
19 monitoring attributable to uranium and thorium processing  
20 activities conducted in the United States after the effective  
21 date of this Act.

22 URANIUM MILL TAILINGS FUND

23 SEC. 8. (a) ESTABLISHMENT OF TAILINGS FUND.—

24 There hereby is established in the Treasury of the United  
25 States a separate fund, to be known as the Uranium Mill  
26 Tailings Fund. The Tailings Fund shall consist of—

(1) all contributions, receipts, proceeds, and recoveries realized by the Secretary of Energy under subsection (c) and section 9, which shall be deposited in the Tailings Fund immediately upon their realization;

(2) any appropriations made by the Congress to the Tailings Fund; and

(3) any unexpended balances available on the effective date of this Act, for functions or activities necessary or incident to the disposal of, or remedial action pertaining to, byproduct material, which shall automatically be transferred to the Tailings Fund on such date.

(b) **USE OF TAILINGS FUND.**—The Secretary of Energy may, subject to subsection (c), make expenditures from the Tailings Fund only for purposes of compliance with this Act, including expenditures for any reimbursement under section 5.

(c) **ADMINISTRATION OF TAILINGS FUND.**—

(1) The Secretary of the Treasury, after consultation with the Secretary of Energy, shall annually submit to the Congress a report on the financial condition and operation of the Tailings Fund during the preceding fiscal year.

(2) The Secretary of Energy shall submit the budget of the Tailings Fund to the Office of Manage-

1        ment and Budget annually along with the budget of  
2        the Department of Energy submitted at such time in  
3        accordance with chapter 11 of title 31, United States  
4        Code. The budget of the Tailings Fund shall consist of  
5        the estimates made by the Secretary of Energy of ex-  
6        penditures from the Tailings Fund and other relevant  
7        financial matters for the succeeding three fiscal years,  
8        and shall be included in the Budget of the United  
9        States Government. The Secretary of Energy may  
10       make expenditures from the Tailings Fund in such  
11       amounts as approved in advance in appropriation Acts.

12        (3) If the Secretary of Energy determines that the  
13       Tailings Fund contains at any time amounts in excess  
14       of current needs, the Secretary of Energy may request  
15       the Secretary of the Treasury to invest such amounts,  
16       or any portion of such amounts as the Secretary of  
17       Energy determines to be appropriate, in obligations of  
18       the United States—

19                (A) having maturities determined by the Sec-  
20       retary of the Treasury to be appropriate to the  
21       needs of the Tailings Fund; and

22                (B) bearing interest at rates determined to be  
23       appropriate by the Secretary of the Treasury,  
24       taking into consideration the current average  
25       market yield on outstanding marketable obliga-

1           tions of the United States with remaining periods  
2           to maturity comparable to the maturities of such  
3           investments, except that the interest rate on such  
4           investments shall not exceed the average interest  
5           rate applicable to existing borrowings.

6           (4) Receipts, proceeds, and recoveries realized by  
7           the Secretary of Energy under this section, and ex-  
8           penditures of amounts from the Tailings Fund, shall be  
9           exempt from annual apportionment under the provi-  
10          sions of subchapter II of chapter 15 of title 31, United  
11          States Code.

12          (5) If at any time the moneys available in the  
13          Tailings Fund are insufficient to enable the Secretary  
14          of Energy to discharge the Secretary's responsibilities  
15          under this section, the Secretary of Energy shall issue  
16          to the Secretary of the Treasury obligations in such  
17          forms and denominations, bearing such maturities, and  
18          subject to such terms and conditions as may be agreed  
19          to by the Secretary of Energy and the Secretary of the  
20          Treasury. The total of such obligations shall not  
21          exceed amounts provided in appropriations Acts. Re-  
22          demption of such obligations shall be made by the Sec-  
23          retary of Energy from moneys available in the Tailings  
24          Fund. Such obligations shall bear interest at a rate de-  
25          termined by the Secretary of the Treasury, and shall



1 be not less than a rate determined by taking into con-  
2 sideration the average market yield on outstanding  
3 marketable obligations of the United States of compa-  
4 rable maturities during the month preceding the issu-  
5 ance of the obligations under this paragraph. The Sec-  
6 retary of the Treasury shall purchase any issued obli-  
7 gations, and for such purpose the Secretary of the  
8 Treasury is authorized to use as a public debt transac-  
9 tion the proceeds from the sale of any securities issued  
10 under chapter 31 of title 31, United States Code, and  
11 the purposes for which securities may be issued under  
12 such chapter are extended to include any purchase of  
13 such obligations. The Secretary of the Treasury may at  
14 any time sell any of the obligations acquired by him  
15 under this paragraph. All redemptions, purchases, and  
16 sales by the Secretary of the Treasury of obligations  
17 under this paragraph shall be treated as public debt  
18 transactions of the United States.

19 RESPONSIBILITY FOR COSTS FOR REMEDIAL ACTION

20 SEC. 9. (a) COSTS ASSOCIATED WITH URANIUM AND  
21 THORIUM PROCESSING ACTIVITIES BEFORE EFFECTIVE  
22 DATE.—The costs for reclamation, decommissioning, other  
23 remedial action, and long-term maintenance and monitoring  
24 activities, undertaken by the Secretary or the designee of the  
25 Secretary under section 3, associated with uranium and tho-

1 rium processing activities before the effective date of this Act  
2 shall be shared by—

3 (1) the owners or licensees of pertinent active  
4 sites, as provided in subsection (c);

5 (2) the Federal Government, as provided in sub-  
6 section (d); and

7 (3) persons using source material or special nucle-  
8 ar material for a civilian nuclear power reactor to gen-  
9 erate electrical energy, as provided in subsection (e).

10 (b) CALCULATION OF COST FOR REMEDIAL ACTION  
11 FOR PROCESSING ACTIVITIES CONDUCTED BEFORE EF-  
12 FECTIVE DATE.—

13 (1) The costs of reclamation, decommissioning,  
14 other remedial action, and long-term maintenance and  
15 monitoring activities that are attributable to milling op-  
16 erations before the effective date of this Act shall be  
17 the total costs multiplied by a fraction with:

18 (A) a numerator comprised of the total dry  
19 tons of tailings attributable to the site but gener-  
20 ated prior to the effective date of this Act; and

21 (B) a denominator comprised of the total dry  
22 tons of tailings attributable to the site, ending on  
23 the date that the reclamation, decommissioning,  
24 or other remedial action is initiated.

(2) The Secretary may promulgate regulations relating to the calculation of the fractions specified in paragraph (1), and may require reasonable information to be submitted by the owners or licenses of the uranium or thorium processing sites concerning such calculations.

(C) SHARE OF COSTS OF OWNERS OR LICENSEES.—

(1) For uranium or thorium processing sites initially licensed before the effective date of this Act, the licensee or owner of each uranium or thorium site for which reclamation, decommissioning, other remedial action, or long-term maintenance and monitoring is performed by the Secretary or the designee of the Secretary shall pay to the Treasury of the United States, to be deposited in the Tailings Fund, an amount equal to—

(A) 15 per centum of the cost determined under subsection (b); and

(B) 100 per centum of the cost of such activities associated with uranium or thorium milling activities on or after the effective date of this Act.

(2) For uranium or thorium processing sites initially licensed on or after the effective date of this Act, and for which the Secretary or the designee of the Secretary performs reclamation, decommissioning,

1 other remedial action, or long-term maintenance and  
2 monitoring processing site shall pay to the Treasury of  
3 the United States, to be deposited in the Tailings  
4 Fund, an amount equal to 100 per centum of the cost  
5 for such activities.

6 (3) All payments by licensees or owners under  
7 this section shall be made on an annual basis for reclama-  
8 tion, decommissioning and remedial action undertak-  
9 en during each preceding one-year period beginning on  
10 the effective date of this Act, in accordance with regu-  
11 lations promulgated by the Secretary. Payments by li-  
12 censees or owners for long-term maintenance and mon-  
13 itoring shall be paid no later than the date on which  
14 reclamation and decommissioning of the active site is  
15 completed.

16 (d) SHARE OF COSTS OF FEDERAL GOVERNMENT.—In  
17 recognition that some active sites contain tailings which have  
18 resulted from ore processing to extract uranium and thorium  
19 under contract with the United States for use primarily in  
20 defense programs, the Federal Government shall pay into the  
21 Tailings Fund an amount equal to 30 per centum of the  
22 costs, determined under subsection (b), incurred during each  
23 one-year period beginning on the effective date of this Act for  
24 reclamation, decommissioning, other remedial action, and  
25 long-term maintenance and monitoring activities undertaken

1 by the Secretary or the designee of the Secretary associated  
2 with uranium or thorium processing activities prior to the  
3 effective date of this Act.

4 (e) SHARE OF COSTS UTILITIES.—

5 (1) Persons using source material or special nucle-  
6 ar material for a civilian nuclear power reactor to gen-  
7 erate electrical energy shall enter into agreements with  
8 the Secretary to pay a fee, as provided in paragraph  
9 (2), to offset 55 per centum of the costs, determined  
10 under subsection (b), incurred during each one-year  
11 period beginning on the effective date of this Act, for  
12 reclamation, decommissioning, other remedial action,  
13 and long-term maintenance and monitoring activities  
14 undertaken by the Secretary or the designee of the  
15 Secretary associated with uranium or thorium process-  
16 ing activities prior to the effective date of this Act.

17 (2) For electricity generated by a civilian nuclear  
18 power reactor and sold on or after the effective date of  
19 this Act, the fee described in paragraph (1) shall be  
20 equal to 0.15 mil per kilowatt hour. Such fee shall be  
21 paid to the Treasury of the United States and shall be  
22 deposited in the Tailings Fund.

23 (3)(A) Not later than one hundred and twenty  
24 days after the effective date of this Act the Secretary  
25 shall establish procedures for the collection and pay-

1       ment of the fee established by paragraph (1). The Sec-  
2       retary shall annually review the amount of such fee to  
3       evaluate whether collection of the fee, contribution by  
4       the owner or licensee, and the payments of the United  
5       States, will provide sufficient revenues to offset the  
6       costs experienced and expected for reclamation, decom-  
7       missioning, other remedial action, and long-term main-  
8       tenance and monitoring activities undertaken by the  
9       Secretary or the designee of the Secretary. In the  
10      event the Secretary determines that either insufficient  
11      or excess revenues are being collected, the Secretary  
12      shall, in order to recover the costs incurred by the  
13      Federal Government for reclamation, decommissioning,  
14      other remedial action, and long-term maintenance and  
15      monitoring, propose an adjustment to the fee estab-  
16      lished in paragraph (1) to ensure full funding. The Sec-  
17      retary shall immediately transmit this proposal for such  
18      an adjustment to the Congress. The adjustment to the  
19      fee proposed by the Secretary shall be effective after a  
20      period of one hundred and twenty days of continuous  
21      session of the Congress have elapsed following the re-  
22      ceipt of such transmittal unless during such one hun-  
23      dred and twenty-day period there is enacted into law a  
24      joint resolution disapproving such adjustment.

1 (B) For purposes of the one hundred and twenty-  
2 day period described in subparagraph (A)—

3 (i) continuity of session of the Congress is  
4 broken only by an adjournment sine die; and

5 (ii) the days on which either House is not in  
6 session because of an adjournment of more than  
7 three days to a day certain are excluded in the  
8 computation of the one hundred and twenty-day  
9 period.

10 (4)(A) The Commission shall not issue or renew a  
11 license to any person to use a utilization or production  
12 facility under the authority of section 103 of the  
13 Atomic Energy Act of 1954 (42 U.S.C. 2133) or to  
14 use special nuclear material at such a facility unless  
15 such person has entered into an agreement with the  
16 Secretary under this section.

17 (B) The Commission, as it determines necessary  
18 or appropriate, may require as a condition to the issu-  
19 ance or renewal of a license under section 103 of the  
20 Atomic Energy Act of 1954 (42 U.S.C. 2133), or a  
21 license for special nuclear material under section 53 of  
22 such Act, that the applicant for such license shall have  
23 entered into an agreement with the Secretary for the  
24 disposal of byproduct material.

(f) LIMITATION ON FINANCIAL OBLIGATION OF  
ACTIVE SITE OWNERS AND UTILITIES.—Except for the  
payment of the fee and contributions provided in this section,  
the Federal Government may not impose any further financial obligation on persons using source material or special nuclear material for a civilian nuclear power reactor to generate electrical energy, or on owners or licensees of uranium or thorium processing sites, for reclamation, decommissioning, other remedial action or long-term maintenance and monitoring associated with active sites.

DEFINITIONS

SEC. 10. For purposes of this Act—

(1) the terms “active uranium or thorium processing site” and “active site” mean—

(A) any uranium or thorium processing site, including the mill, containing byproduct material for which a license (issued by the Nuclear Regulatory Commission or its predecessor agency under the Atomic Energy Act of 1954, or by a State as permitted under section 274 of such Act (42 U.S.C. 2021)) for the production at such site of any uranium or thorium derived from ore—

(i) is in effect on January 1, 1978;

(ii) is issued or renewed after January 1, 1978; or



1 (iii) for which an application for renewal  
2 or issuance is pending on, or after, Janu-  
3 ary 1, 1978; and

4 (B) any other real property or improvement  
5 on such real property that—

6 (i) is in the vicinity of such site; and

7 (ii) is determined by the Secretary, in  
8 consultation with the Commission, to be con-  
9 taminated with residual byproduct material.

10 (2) The term "Administrator" means the Adminis-  
11 trator of the Environmental Protection Agency.

12 (3) The term "byproduct material" has the mean-  
13 ing given such term in section 11e. (2) of the Atomic  
14 Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

15 (4) The term "civilian nuclear power reactor"  
16 means any civilian nuclear powerplant required to be  
17 licensed under section 103 or section 104 of the  
18 Atomic Energy Act of 1954 (42 U.S.C. 2133).

19 (5) The term "Commission" means the Nuclear  
20 Regulatory Commission.

21 (6) The term "Indian tribe" means any tribe,  
22 band, clan, group, pueblo, or community of Indians  
23 recognized as eligible for services provided by the Sec-  
24 retary of the Interior to Indians.

1 (7) The term "Secretary" means the Secretary of  
2 Energy.

3 (8) The terms "source material" and "special nu-  
4 clear material" have the meanings given such terms in  
5 section 11 of the Atomic Energy Act of 1954 (42  
6 U.S.C. 2014).

7 (9) The term "tailings" means the wastes pro-  
8 duced by the extraction or concentration of uranium or  
9 thorium from any ore processed primarily for its source  
10 material content.

11 (10) The term "Tailings Fund" means the Urani-  
12 um Mill Tailings Fund established in section 8.

13 TECHNICAL AND CONFORMING AMENDMENTS TO THE  
14 ATOMIC ENERGY ACT OF 1954

15 SEC. 11. (a) OWNERSHIP AND CUSTODY OF CERTAIN  
16 BYPRODUCT MATERIAL AND DISPOSAL SITES.—

17 (1) Section 83a.(1) of the Atomic Energy Act of  
18 1954 (42 U.S.C. 2113(a)(1)) is amended by inserting  
19 before "the licensee" the following: "the Secretary of  
20 Energy will be in a position to, or, as appropriate,".

21 (2) Section 83(b)(5) of the Atomic Energy Act of  
22 1954 (42 U.S.C. 2113(b)(5)) is amended by striking out  
23 the last sentence.

24 (b) STANDARDS AND INSTRUCTIONS FOR BONDING,  
25 SURETY, OR OTHER FINANCIAL ARRANGEMENTS, INCLUD-  
26 ING PERFORMANCE BONDS.—Section 161x. of the Atomic

1 Energy Act of 1954 (42 U.S.C. 2201(x)) is amended by in-  
2 serting after "ensure" in the matter preceding paragraph (1)  
3 the following:", for the share of costs for which the licensee  
4 is responsible".

5 AUTHORIZATION OF APPROPRIATIONS

6 SEC. 12. There is authorized to be appropriated, effec-  
7 tive on October 1, 1985, to the Uranium Mill Tailings Fund,  
8 \$290,000,000, to remain available until expended.

9 LIMITATION ON SPENDING AUTHORITY

10 SEC. 13. The authority under this Act to incur indebted-  
11 ness, or enter into contracts, obligating amounts to be ex-  
12 pended by the Federal Government shall be effective for any  
13 fiscal year only to such extent or in such amounts as are  
14 provided in advance by appropriation Acts.

15 EFFECTIVE DATE

16 SEC. 14. The provisions of and amendments made by  
17 this Act shall become effective upon the expiration of the  
18 sixty-day period following the date of enactment of this Act.

○

The CHAIRMAN Our first witness is the Governor of the State of New Mexico, the Honorable Toney Anaya.

[Prepared statement of Hon. Toney Anaya, with attachment, may be found in the appendix.]

**STATEMENT OF HON. TONEY ANAYA, GOVERNOR OF NEW MEXICO, ACCOMPANIED BY DENISE FORT, DIRECTOR, ENVIRONMENTAL IMPROVEMENT DIVISION**

Mr. ANAYA. Thank you, Mr. Chairman. Members of the Congress, Members of the Senate.

First of all, I would like to thank our congressional delegation from New Mexico, those who are here with us today, and Congressman Skeen, who is also supportive of this legislation, as well as the many other Members of Congress who have joined in on this particular proposal.

I would particularly like to thank Congressmen Richardson and Lujan and Senator Domenici and Senator Bingaman for their leadership and would urge this Congress to favorably consider the legislation before you, H.R. 2236 and S. 1004.

Mr. Chairman, here with me today is the director of our State Environmental Improvement Division, Denise Fort, and many others from New Mexico from whom you will be hearing later on.

I would like to thank you for this opportunity to discuss a problem of great concern to the State of New Mexico, uranium mill tailings.

Uranium mill tailings are easily overlooked in discussions of national energy policy. Nuclear powerplant safety has been and will continue to be the focus of public concern and congressional action in such legislation as the Price-Anderson Act authorization.

Nuclear waste disposal, from the siting of a commercial repository to the management of low-level waste among States, has and will continue to command enormous attention around the country and here in Washington.

However, Mr. Chairman, mill tailings, in contrast, touch very few States and thus draw little attention by comparison. The fact that continued production of uranium has all but collapsed may tend to give a false sense of security that we don't have a problem of great urgency.

Regulations have failed to address this grave problem, and I am convinced that only congressional passage of mandatory cleanup legislation will finally deal with the environmental effects of abandoned mill tailings. With the proposed legislation you are now considering, Congress is again focusing on this neglected problem and asking how in equity and fairness the cleanup of the remaining tailings should be carried out.

Let me describe the problem briefly as I see it in my home State of New Mexico.

In the past, New Mexico was the major domestic producer of uranium for both defense and nuclear power production, producing almost one-half of all domestic uranium.

As you know, however, the U.S. uranium industry is in a serious state of decline. In New Mexico, employment in the industry has gone down from 6,800 workers at 38 mines and 5 mills in 1980 to

only about 280 workers between 1 test mine and 1 mill operating today. Furthermore, that one mill, which is currently processing stockpiled ore, will go into a standby status early next month, with further layoffs.

Thus the mines have shut down, the mills are not operating, the uranium workers have been laid off, contributing to our very serious unemployment problem, but the mill tailings, however, remain with us.

In fact, New Mexico has about 45 percent of all tailings that would be covered by the proposed legislation that you are considering today.

Remedial action at two inactive millsites in New Mexico will be carried out under the Uranium Mill Tailings Radiation Control Act. Five active or licensed millsites, containing in excess of 85 million tons of mill tailings, are located in New Mexico. These active sites are not included in the UMTRCA Remedial Action Program.

Approximately 30 million tons of tailings at three of these sites were generated under the Atomic Energy Commission Uranium Program for military needs. Tailings generated under the AEC Program are currently commingled with tailings generated to produce uranium for nuclear generation of electricity.

There are both environmental and economic problems associated with these tailings sites. Groundwater contamination problems have been documented at each of the sites. Contamination of surface areas surrounding the sites continues to spread through wind erosion.

The closing down of the uranium mills leaves environmental problems without providing continued financial resources to pay for cleanup of the tailings sites.

Soon after I became Governor, I requested a review of the State's radiation protection regulations by a group of experts in this area. The recommendations of this group were finalized this past February. The group found that the State's regulations and financial sureties for tailings cleanup need to be strengthened considerably.

A detailed timetable for revision of the State's regulations has been established. Since the State's regulations must be compatible with the NRC regulations, it is imperative that the NRC requirements be finalized before the State can develop final regulations for hearing.

Other recent actions by the State include strengthened technical abilities, intervention in a recent lawsuit related to Superfund actions at uranium milling sites, and request to the EPA to designate two New Mexico millsites as Superfund sites because of groundwater pollution problems.

Costs to achieve cleanup to the Federal standards have been estimated by DOE at about \$3.75 per ton. Yet costs have recently been projected to be about \$8 per ton at one of the UMTRCA inactive sites in New Mexico.

Based on these estimates, total costs for cleanup of the five active sites in New Mexico could range from \$300 million to as much as \$640 million. Costs for individual sites could range from as much as \$115 million to \$240 million.

Clearly costs of this magnitude for tailings cleanup were never considered in the pricing of uranium. In fact, tailings cleanup was

not considered at all during production of much of the uranium mill tailings, particularly during the AEC Program and early production for nuclear power.

The present and projected financial condition of the uranium industry indicates its need for assistance in meeting the costs of tailings cleanup. I am concerned that without assistance some operators may choose to avoid the high cost of cleanup through bankruptcy. There is little reason now to believe that State environmental interests will be favored in bankruptcy court decisions.

The financial responsibility provisions identified in the legislation are appropriate. In New Mexico, about 35 percent of the tailings at active sites were generated under the AEC Uranium Program. Three of the five sites were established and licensed by the AEC before tailings were recognized to be a problem.

I believe that the Federal Government bears a responsibility to assist in cleanup at these sites. I also believe that the Nation's utility industry, which benefited from the production of uranium, should share in the costs of tailings cleanup. While none of us like to see further increases in electrical rates, the costs of supporting tailings cleanup would be minimal for the individual ratepayer.

In my mind, the regulatory problems presented by uranium mill tailings might be viewed as a paradigm of unsuccessful environmental regulation. Federal agencies have the expertise and the resources to tackle these complicated regulatory subjects. State governments are subject to the pollution haven competition that can leave a State reluctant to impose strict environmental controls for fear of losing severely needed businesses.

Rather than a smooth, national program, regulatory decisions have been bounced between Federal agencies, Congress, and the courts. Even now NRC has yet to promulgate its final standards for stabilization.

Blame is ample enough to share for this situation.

I would like to make sure that New Mexico's position with regard to cleanup of these tailings is totally clear on one point. Weakening environmental standards is not the answer to our problem, and New Mexico State government's support of this legislation is premised on that proposition.

The environmental costs imposed by mill tailings are beyond questioning at this date. The only question is who will bear the costs: The neighboring citizens? Their water supplies and future generations? The uranium companies? Those who benefit from nuclear power? Or others?

There are no easy answers to that question, but I reiterate our position. The tailings must be stabilized in an environmentally safe fashion. The costs of proper environmental practices should not fall on those who live near the sites.

For these reasons, the State of New Mexico strongly supports the legislation before you today to establish a mechanism and funding for proper uranium mill tailings cleanup.

We do, however, have several specific concerns with the bills as presently drafted. Our two major concerns relate to, first the applicable standards and oversight for remedial action, and, second, the limitation on financial obligation of active siteowners and utilities.



The State of New Mexico believes that the legislation should clearly specify that all remedial action at active tailings sites must at a minimum comply with the EPA and NRC standards. For this reason, we would suggest the approach of the House bill with respect to the applicable standards that are found in sections 3, 4, and 5.

We believe that the EPA standards and the implementing regulations proposed by the NRC, represent a reasonable and prudent approach to tailings cleanup. Those standards also represent a reasonable compromise between the restrictive standards originally adopted by the NRC, and suspended by the Congress, and the very lax standards sought by some in the uranium industry.

The proposed NRC implementing regulations also contain the flexibility required to address problems at existing sites, as they allow for approval of site-specific alternatives to the stated requirements. These regulations have already undergone an extensive public review and comment process.

In the opinion of the New Mexico State regulatory agency and the advisory board that I convened the existing New Mexico regulations for tailings stabilization and other remedial action do not provide adequate protection of public health and the environment.

The UMTRCA requires that State regulations be compatible with those promulgated by the EPA and NRC. Regulations compatible with the Federal regulations must be adopted by the State or else regulation of uranium mills and tailings sites will be returned to the Federal Government. Clear language requiring compliance with the Federal standards within this legislation would shorten the regulatory maneuvers and litigation that have slowed environmental regulation of tailings disposal to a standstill.

A mechanism for oversight and licensing of remedial activities by the NRC such as that presently provided for the UMTRCA inactive sites is needed. These procedures should include measures for public participation in selection of the remedial action alternative to be implemented.

We believe that the bills' language providing for limitation on liability currently is so broad that it would literally excuse a licensee from any responsibility for remedial action related to tailings disposal and may be interpreted as preventing any future revisions to the Federal regulations for uranium mill tailings disposal.

We are particularly concerned that licensees be responsible for remedial action and cleanup of spills or other contamination that may occur during the active operation of the site.

The CHAIRMAN. Governor, let me interrupt you at this point. I have two housekeeping matters. It has been requested that the record be left open so that members can file statements. That will be done for the next 10 days if there is no objection.

Second, Senator Metzbaum has sent over a statement to be submitted for the record. I haven't read it closely, but he seems to be able to contain his enthusiasm for this legislation and might even be opposed.

[EDITOR'S NOTE.—The prepared statement of Hon. Howard M. Metzbaum, referred to by Chairman Udall, may be found in the appendix. See table of contents for page number.]

The CHAIRMAN. Finally, before I leave, I wanted to say to the other witnesses scheduled today, we have got a long list and we are short of time. These bells are going to start ringing soon in the House and the Senate, and I would urge the witnesses this morning to summarize in 5 or 6 minutes the main points you want to make.

We are creating a very good hearing record. We will put all the statements in the record in full. But in fairness to all of the witnesses today on this important matter we would hope that witnesses could abbreviate their testimony.

With that, I leave the hearing in the hands of my co-chair in the Senate. Bill Richardson will be replacing me on the House side until I can get back.

Mr. DOMENICI. Thank you very much, Mr. Chairman.

Governor, you can complete your statement. We would very much like to accommodate the remaining witnesses, but surely we don't want to cut you short. Do you have any final remarks for the committee, Governor?

Mr. ANAYA. Mr. Chairman, with the Chair's permission I would like to submit the balance of the statement that I had almost completed for the record and be prepared to address any questions the committee may have.

Again, I would like to thank you personally for the leadership you have demonstrated here.

Mr. DOMENICI. Thank you very much, Governor. Your entire statement will be made a part of the record without objection.

I assume that all of the Members from both Houses desire to question the witnesses. Why don't we just do it informally without any time limits, relying upon our own discretion to keep our questions as brief as possible so that we can get through the witnesses.

With that, I have two questions, and they are very brief, Governor.

Some of the witnesses that are going to testify on this legislation say that there is no evidence that the uranium producers will be unable to dispose of their mill tailings because of financial difficulties. Have you seen any evidence of this in New Mexico? Or put it another way, how does their financial health look to you?

Mr. ANAYA. Mr. Chairman, I would very quickly respond on both points.

First of all, there are representatives of the uranium industry here that I am sure could get into more and better detail in terms of their own financial condition, but I can tell you as Governor of one State that the financial condition of the uranium industry in New Mexico is a very poor one. As I indicated in my prepared statement, we have gone from almost 7,000 employees down to almost nothing now. The uranium industry is at a standstill. It is on the rocks, and I would hate to see additional burdens placed on them to basically totally destroy the uranium industry in the country.

Mr. DOMENICI. Governor, as you know the Community of Grants has petitioned the Congress to adopt this bill and they obviously have two reasons. They want it cleaned up and their economy is in such terrible shape they are looking forward to some work. But some of the witnesses would indicate that rather than provide an



opportunity for the unemployed miners that this bill would delay remedial action. Do you agree with that?

Mr. ANAYA. Mr. Chairman, I do not agree with that proposition. I would caution that I don't think this legislation should be viewed principally as an employment opportunity. That is certainly a secondary and a good benefit. It is primarily a health and environmental concern. But I happen to take the opposite approach that if we continue without legislation of this nature, we probably will not see cleanup occur over the next one or two decades. We will simply see a continuation of the delay and adoption of regulations at the Federal level, and we will see a continuation of litigation over many, many years to come.

I don't think that unless we adopt legislation such as that which you are proposing that we are going to see cleanup of these mill sites in our lifetime.

Mr. DOMENICI. Congressman Richardson.

Mr. RICHARDSON. Thank you, Senator.

Governor, the burden in this bill is 30-percent cleanup costs paid by the Federal Government, 55 percent by utilities, 15 percent by the industry. In some of the testimony that is going to follow you some of the utility representatives are going to say that the financial burden on them, the 55 percent, is much too high and that they basically can't handle that.

I wondered, Governor, if you had seen the funding formula which has been arrived at through consultation and negotiations. Some say not negotiations to everybody's liking. I wondered if you could go on the record as to the issue of bearing the brunt of the costs of this cleanup.

Mr. ANAYA. Mr. Chairman, Congressman Richardson, I think that probably the formula itself, in my judgment, is about as fair as one can arrive at in a negotiated arrangement. Certainly that is not to suggest that the percentages could not be increased in some areas and decreased in others.

I think that the three individuals, the Federal Government, the utilities and the owners are the three principal entities that one must look to for reimbursement. I think how one arrives at the particular percentages is certainly open to long and heated debate.

I have no problem in endorsing the percentages contained in the bill, but I could also suggest that maybe some adjustments could be made one way or the other.

I think we all have to be cognizant of the fact that nobody wants to pay the price tag, certainly in the condition that our Federal budget is in these days, and no one knows that any better than the chairman from the Senate here today, Senator Domenici. I think with the problems of our Federal deficit that the more burden we try to place on the Federal end of it the less likely it is that we are going to get anything passed.

I think it is time, Congressman Richardson, that we stop trying to appease everybody down to the penny and get legislation on the books and enforce the cleanups.

Mr. RICHARDSON. Thank you, Governor.

I have many other questions, but I am not going to ask them now. I would just like to recognize two of our colleagues that came

in, Congressman Barton and Congressman Craig from the Interior Committee.

I have no further questions for Governor Anaya.

Mr. DOMENICI. Would you like to submit those for response?

Mr. RICHARDSON. I will submit them for the record as well as my opening statement.

Mr. DOMENICI. Governor, Chairman Udall indicated we would have the record open for 10 days. I hope that is accommodating with reference to the responses that you could make to any of the written questions. If it isn't, we will obviously accommodate.

Mr. ANAYA. We will accommodate the 10-day period, Mr. Chairman.

Mr. DOMENICI. Representative Lujan.

Mr. LUJAN. Thank you, Mr. Chairman.

Governor, the percentages that you were talking about have been arrived at in roughly this fashion: the Federal Government is being asked to pay 30 percent because 30 percent of these particular tailings were for uranium produced for the Federal Government. The 15 percent for the companies is because they have generated a certain amount of tailings after the 1978 act, at which time they should have had a pretty clear indication that there was going to be some remedial costs. They say that what they generated was 6 percent and they are willing to pay 15 percent of the amount. That is to just kind of clear the record as to why those percentages are in there.

I have only one question on what you raised in your statement, which you did not read, and that pertains to paragraph (f) of section 9 in both of the bills, the limitation of financial obligation of active site owners and utilities. As respect to things that might come up later, you seem to indicate that might preclude any action to get some money out of that fund in order to take care them. You mention the example of Rio Puerco.

In section 12 we set up \$290 million, which is the 30 percent that the Federal Government would be able to put in, thinking that it is probably going to be a total of \$ 1 billion to clean up all the sites. It would be my impression that all we would have to do, if the \$1 billion was not efficient, would be to introduce legislation to increase that amount for the Federal Government. It doesn't seem to me to be a really big problem in extending the program further if other complications develop.

Is that perhaps an accurate presentation?

Mr. ANAYA. Mr. Chairman, Congressman Lujan, as part of my statement that I am submitting for the record we have attached some technical recommended changes for consideration by the two subcommittees and by staff. Our concern there is primarily one of interpretation. As you have indicated, Congressman Lujan, we simply would want to make sure that there is no ambiguity in terms of how it should be interpreted.

Mr. LUJAN. Thank you, Governor.

Thank you, Mr. Chairman.

Mr. DOMENICI. Mr. Murphy.

Mr. MURPHY. Thank you, Senator.

I just have a couple of questions.

Thank you, Governor, for traveling this distance to enlighten us.

I have in my district the first site that was cleaned up under the Uranium Mill Tailings Act. I appreciate the support of Chairman Udall and others in accomplishing that.

How many sites do you have in New Mexico?

Mr. ANAYA. We have seven sites.

Mr. MURPHY. Has there been any effort by the State government to confine these sites, to seal them off, to prevent development in the adjacent area, or to command the industries or owners of those sites to do anything preparatory to preventing further harm? You know what happens. We start to build up around them and other things happen. Have you done anything on the State level to this point?

Mr. ANAYA. Mr. Chairman, Congressman Murphy, there are a couple of things going on, neither one of which I think directly addresses the questions. One indirectly. There isn't much activity going on around these sites at all. In fact, there is a tremendous amount of inactivity in terms of not just the uranium industry itself. In the town of Grants, for example, many of the homes in the area have been abandoned, many of them have been sold off, and so on. I think in the immediate future there is no tremendous danger that there may be activity going on in the surrounding area that would make the situation worse.

Second, in terms of what the State is doing, we are in the process, as I just briefly alluded to in my statement, of trying to determine exactly the extent of the problem in New Mexico and how we as a State might be able to proceed.

We are finding that basically—and this is not an excuse; it's a fact of the regulatory process right now—that while we are an agreement State, our hands are relatively tied in terms of how much action we can take or what we can demand or insist upon. I think that once we start to promulgate regulations without knowing what Federal standards we have to come up to, or start trying to go beyond anything that the Congress may be considering, we are going to find ourselves in court pretty fast.

So I don't think there is a tremendous amount that we can do other than proceed with fact finding, which we in that case are.

Mr. MURPHY. I would strongly suggest that in order to limit the ultimate cost of this that you do something. Don't let happen there what happened in Salt Lake City and Canonsburg, PA, and the site in New Jersey where we didn't know what the problem was. People were actually carrying the mill tailings off and using it as fill in other areas, using it for building materials, building next to the dump, buying inexpensive property. Nobody knew, and now we know that the levels of radiation are somewhat higher in that area.

You are looking to the country for the financial effort to help clean this up and we may be looking back at the States affected and saying, well, what did you do to limit the liability. Now is the time to limit that liability.

Next, I would suppose that I may be offering an amendment to the bill when it is reached for markup to include some cost sharing on the part of the States. The State of Pennsylvania and the State of Utah presently are bearing 20 percent of the cost of cleaning up the uranium mill tailings under the 1978 act. I would expect that my amendment would be somewhere in the nature of a 20-percent

cost sharing by the States wherein the sites are placed, and I might say that probably that 20-percent would come off what the bill has allocated for utilities at this time.

Thank you very much, Mr. Chairman.

Mr. DOMENICI. Representative Strang.

Mr. STRANG. I have no questions. I just thank the Governor for coming. I will have some questions in the next 10 days.

Mr. DOMENICI. Congressman Darden.

Mr. DARDEN. Thank you, Mr. Chairman.

Governor, we certainly appreciate your presence here today.

It is my understanding that the Congress passed legislation in 1978. Why won't these sites that we have been describing be cleaned up by the site operators as required by the act of 1978?

Mr. ANAYA. Mr. Chairman, Congressman Strang, it is my understanding that the sites that we are talking about were not covered. The previous legislation basically addressed the inactive sites. We are now talking about so-called active sites, although because of the fact that some of them have not been active for a long period of time, one may argue they in fact are inactive.

I do not feel that the 1978 legislation covers the active sites, and the fact that we do not have the Federal regulatory mechanism in place with EPA and NRC yet arriving at their combined standards and regulations really leaves us without a mechanism to ensure that the active sites are in fact cleaned up.

Mr. DARDEN. Governor, Congressman Richardson, as you know, has been very instrumental in seeking to require the Government to purchase a larger percentage of domestic uranium, and I am certainly supportive of that effort. Do you foresee any problems or any conflicts in the event that we are able to reactive the uranium industry to a certain extent with any provisions of this act?

Mr. ANAYA. Mr. Chairman, Congressman Darden, I do not see any conflict. In fact, any future production that may come about would be very compatible. Under the provisions of this proposed Act, as I understand it, for any future production the owners themselves would be responsible for ensuring that the mill tailings are cleaned up.

Mr. DARDEN. Thank you very much, Governor.

Mr. Chairman, I yield back the balance of my time.

Mr. DOMENICI. Thank you very much.

Congressman Barton.

Mr. BARTON. Thank you, Mr. Chairman.

I have no questions. I would just like to make a statement to the Governor of New Mexico that your congressional and senatorial delegation have been extremely concerned about this problem and have been providing excellent leadership in both the Senate and the House to try to solve it.

There are three sites in Texas that have some uranium mill tailings, and I am concerned about the environmental problems of cleaning those up. I am also concerned from a financial standpoint that we come up with a financial solution that is equitable to the industry and to the consumers and the taxpayers. We want to get the environment clean again, but we want to do it in a cost effective manner.

I have no questions.

Mr. DOMENICI. Senator Bingaman.

Mr. BINGAMAN. Thank you, Mr. Chairman. Let me just submit some questions for the record, if I could.

Also, before I turn it back to you I would like to ask the Governor if he would want to comment on the suggestion that was made earlier by Congressman Murphy about State cost sharing possibilities on this. Whatever the Governor would want to say for the record on that subject I would be interested in hearing.

To what extent do you know of any benefit the consumers of nuclear power generated from uranium have received in New Mexico? Has there been any of that power used or usable in our State?

Mr. ANAYA. Mr. Chairman, Senator Bingaman, I appreciate the opportunity to respond to that. I will try not to have my response sound pretty much like the response of any other group that may be called upon to pay for it: "Yes, we have got to pay for it, but don't put the burden on us." I don't mean to suggest that.

With respect to the question you asked, in New Mexico we are just now starting to have some of the benefits, if you wish, of nuclear power generated electricity. The Public Service Co. of New Mexico has purchased part of the Palo Verde Nuclear Powerplant, as has El Paso Electric, both of whom serve together the majority of the State of New Mexico. So some of that electricity will be coming into New Mexico, and if this formula were adopted, I would suspect that the majority of our residents in New Mexico would have to share some of the burden. So it is not a question of trying to shift the burden onto consumers in other States. I recognize we would have to bite the bullet as well.

With respect to the States ability, I can only speak for the State of New Mexico. It is probably in no different shape than most any other State in the country and not too far off from the Federal Government's problems in terms of trying to find adequate finances to be able to pay for just the ongoing operations of State government.

Without getting into a long-winded explanation here, as the congressional delegation from New Mexico is fully aware, we have been caught in the throes of a very bad recession, mostly as a result of what has happened to our mining and oil and gas industry in the State. We are a very poor State in terms of per capita income. We are now trying to find resources for such things as education and economic development. Any additional burden of any significant amount and I think the State would be very, very hard pressed to try to come up with it.

That is not to suggest let's pay for it but make somebody else pay for it. We are not trying to shirk from our responsibilities, but we feel that we will have already contributed a substantial amount by having produced the uranium, by having to be concerned about the environmental and health impact, and by the fact that many if not the majority of our consumers would help to pay for the cleanup under the current formula.

Mr. BINGAMAN. Thank you, Mr. Chairman.

Mr. DOMENICI. Representative Craig.

Mr. CRAIG. Thank you very much, Mr. Chairman.



Governor, we appreciate your being here today to give your testimony and your perspective from a major uranium producing State with the obvious problems that you now have.

I think the formula will be of great concern to all of us, and whatever equity we can build into that formula to balance out those who will share in the costs will be one of the ultimate goals of this committee and the Senate.

Over the course of the good many years that New Mexico has been a uranium producing State did not the State receive royalty payment from the production?

Mr. ANAYA. Mr. Chairman, Congressman Craig, yes we have. I could not give the committee here today the exact dollar amount, although I would be happy to supply that for the record. We do in the State of New Mexico charge a royalty for the extraction of minerals from our grounds.

Mr. CRAIG. If you would do that, I think the committee would appreciate it.

[EDITOR'S NOTE.—At time of printing, Governor Anaya had not yet supplied the information requested by Mr. Craig. When received, that material will be placed in the committee files of today's hearing.]

Mr. CRAIG. What was the total number employed at the peak of the industry's production in your State?

Mr. ANAYA. Mr. Chairman, Congressman Craig, approximately 7,000, and we are down to probably a little under 200 today.

Mr. CRAIG. Those, of course, were taxpaying citizens of the State, were they not?

Mr. ANAYA. Congressman Craig, they were. Today they are individuals who are basically on unemployment, looking to the State for retraining, or looking to the State for other financial assistance.

Mr. CRAIG. I think you can see the direction of my questioning. I think conclusions can be drawn that the State of New Mexico was once a substantial beneficiary of the industry being in its State.

Mr. ANAYA. There is no question about that, Mr. Chairman. We profited as we were attempting to, and successfully doing so, benefit the entire country.

Mr. CRAIG. Of course the country did benefit and we continue to benefit. As an advocate of nuclear power, I would hope we could continue to benefit even more in the future from that source of energy.

I guess the point I am making, Mr. Chairman and Governor, is that it would appear that the suggestion that Congressman Murphy makes is one that deserves some consideration by this committee as to who shares in the costs based on past law and current law that deals with reclamation of sites, that there is a role that the State can play, should play, based on the benefits received, past and possibly present, and potentially future, in this kind of a mining exercise.

Mr. ANAYA. Mr. Chairman, Congressman Craig, if I could just make one very quick statement with respect to that. Again, the State of New Mexico is not attempting to shirk its responsibility. If it would ultimately be decided that we had to play a financial role, we would attempt to do so as best we could.

I would hope, however, that the respective subcommittees would not simply zero in on what economic benefits the State of New Mexico may have accrued at one particular point in time; that they would also look at the fact that the State of New Mexico significantly contributed to the welfare of this country, to the welfare of consumers, as well as the defense of this country, and consequently of the world.

One of the major concerns I had in running for this office and that I continue to hold in my current position is the fact that New Mexico basically, in my judgment—and there are others who would disagree—was pretty much exploited for the natural resources that it did have, that we basically did not receive remuneration anywhere near the benefits that were taken from the State of New Mexico. We have been an energy colony.

We are 47th in per capita income despite the tremendous riches that we have. We have one of the highest unemployment rates in the country. The area in and around the uranium producing areas reached an unemployment rate last year of somewhere around 45 percent.

We did receive some financial benefits, some economic benefits as well as some employment benefits. I would just ask that you keep that overall picture in mind, that you not use that exclusively as the basis for whether States should be required to pay a percentage or not.

I think we have paid far greater than anything that we received in return, and we did so gladly in an effort to try to do our share. Even today we have the entire uranium cycle in New Mexico. Even today, over a lot of internal opposition, we are now becoming a repository in the southeastern part of the State for nuclear waste, the depository on an experimental basis.

So we have gone full cycle and we continue to do as good Americans our share of the responsibilities for this country. We would simply politely ask this committee not to penalize us for having done so.

Mr. CRAIG. Thank you very much, Governor. As representative of a large public land State not unlike New Mexico in a variety of ways, I think that I share your concern that oftentimes public land States and their resources are exploited for the benefit of the Nation and not necessarily for the benefit of the State. We oftentimes become the recipients of the problems of that utilization of public land resource more so than the recipient of its benefits.

I thank you for your thoughts and your testimony.

Thank you, Mr. Chairman.

Mr. DOMENICI. Thank you very much.

Senator Simpson.

Mr. SIMPSON. Chairman Richardson and Chairman Domenici, it is a pleasure to be here. I appreciate very much what both of you are doing with regard to this issue.

It is nice to see you, Governor. Welcome to this hearing on a serious issue.

I have a very brief statement and I will enter it into the record.

Even though I do not sit on the committees of jurisdiction here in the Senate in this area, other than chairing, of course, the Subcommittee on Nuclear Regulation, I am grateful for this invitation

to be here and I appreciate what both chairmen are doing to organize a joint inquiry here and begin to process this bill, which Senator Domenici and I introduced in the Senate and Congressman Richardson introduced in the House.

Certainly this Uranium Mill Tailings Program that was established in 1978 is now really mired in controversy. I think the number of lawsuits involving the program threatens to exceed the number of sites requiring cleanup. EPA and the NRC have been haggling over jurisdiction since 1983. They are paralyzed in that area. The cost of cleanup has skyrocketed. Everybody is taking their shots at the issue and the industry has gone to hell.

It's a very interesting series of decisions and actions that have been taken, but for 6 years we have been messing with the issue and the progress is totally minimal. Maybe at this time we can get to something which I think will resolve the difficulty, and that is who pays. Maybe with resolving the question of who pays we can get the controversy behind us, and we submit this as a proposal to do that.

I look forward to the hearings and doing something to ensure the cleanup of title II active sites.

I appreciate what you are expressing to us, Governor, and admire you for your efforts in this area.

I have no questions of the Governor. Thank you, Mr. Chairman.

Mr. DOMENICI. Thank you very much, Senator.

Are there any further inquiries?

[No response.]

Senator DOMENICI. Governor, we thank you. The questions that will be submitted will be submitted forthwith and we await your response. Thank you very much.

Mr. ANAYA. Mr. Chairman, Congressman Richardson, thank you very much.

I might say to Senator Simpson it is indeed a pleasure to be on the same side of a bill.

Mr. SIMPSON. Thank you, Governor.

Mr. DOMENICI. According to the schedule, the next witness will be Acting Assistant Secretary for Nuclear Energy of the Department of Energy, James Vaughan, Jr.

Mr. Secretary, would you please take the witness stand.

I am not going to repeat what Chairman Udall said, but we would greatly appreciate it if you would abbreviate your remarks. If you have a prepared statement, it will be made a part of the record, without objection.

[Prepared statement of Hon. James W. Vaughan, Jr., may be found in the appendix.]

**STATEMENT OF HON. JAMES W. VAUGHAN, JR., ACTING ASSISTANT SECRETARY FOR NUCLEAR ENERGY, U.S. DEPARTMENT OF ENERGY, ACCOMPANIED BY JOHN BAUBLITZ**

Mr. VAUGHAN. Mr. Chairman, Congressman Richardson, members, I am pleased to be here today to present the Department of Energy's comments on the two proposals.



I also have with me this morning John Baublitz, who directs the Department's remedial action programs and who will assist me in responding to any detailed questions that you may have.

As you indicated, Mr. Chairman, we have submitted for the record a more detailed statement as well as responses to the pre-hearing questions that were posed in the letter of June 28.

With respect to the title I program that is underway, there are currently 24 inactive uranium processing sites requiring remedial action. As you know, the responsibility for the day-to-day project management of those activities is assigned to the Department's Albuquerque, Operations Office.

Remedial actions are underway at the first three high priority sites and preparations are well underway to begin work at the remaining sites.

In addition, we estimate, based on the surveys and work done to date, that a total of about 4,500 vicinity properties will require cleanup.

While the Department has been reasonably successful in implementing UMTRA title I, we have experienced problems with both project schedules and costs.

Milestones for a number of these sites have been delayed due to the difficulties in achieving consensus on a course of action among the numerous parties that are involved in each individual project.

One of the most prevalent issues has been reaching agreement on stabilization-in-place versus relocation of the tailings. The latter action of course, is more acceptable to most local communities even though it is usually more expensive, more time-consuming, and relocation is not technically necessary in many cases.

The Department has also experienced considerable growth in the total estimated cost of the project. I think this is very germane to the discussions here today. We are currently revising our cost projections based on the experience gained to date, and we are trying to take a series of actions to better control the cost growth.

However, based on the initial experience that we have, it is clear that the total cost of the title I cleanup of the inactive sites has grown from the initial estimates of less than \$200 million in 1978 dollars, which was estimated prior to the enactment of Public Law 95-604, and is now somewhere in the range of \$700 to \$900 million, escalated to the year of expenditure.

Our estimate of the maximum escalated cost for each of these projects is in our statement in response to the questions posed by the subcommittee.

We are also currently reviewing our completion schedules because of these delays in the planning stages but it is clear that if we efficiently manage the total number of projects that are remaining, we may be encountering a 2-year delay beyond the 1990 time-frame before we have completed and certified some of the title I sites.

Let me just very briefly highlight some of the factors that contribute to these cost and schedule difficulties.

First is the higher than anticipated cost of meeting stringent EPA standards.

Second is the need to acquire more site characterization data than had been anticipated.

Third is the difficulty in negotiating agreement on remedial action plans among the many involved parties.

Fourth is the requirement to pay Davis-Bacon wages even though work at mill tailings sites does not involve what I would call "construction" in the normal sense of the word.

Against that background of the Department's experience in managing remediation at the title I sites, let me now comment on both the policy and procedural concerns we have with the proposed Uranium Mill Tailings Reclamation Act of 1985.

As has been cited, title II of the Uranium Mill Tailings Radiation Control Act of 1978 specifically assigned responsibility for reclamation of active and licensed sites to the millowner, using standards to be established by EPA and under the direction of the NRC or the agreement State as its licensor.

Accordingly, the Department of Energy seriously questions the premise of the proposed legislation that would require U.S. utilities with nuclear powerplants and the Federal Government to pay the bulk of the costs to clean up currently licensed commercial facilities.

We see the situation in this case as different from those sites included in title I, which were already inactive and which had been almost exclusively involved in producing uranium for the Atomic Energy Commission.

The precedent of relieving the owners of commercial facilities involved in nuclear production or processing activities of the site cleanup costs is an undesirable one for the nuclear industry and for waste generators in general.

In addition to these policy concerns, let me highlight some of the potential impacts of the proposed legislation.

If it were enacted it would authorize the Department to carry out this reclamation in a manner very similar to that being followed for title I.

The management structure proposed by the act would be extremely complicated and difficult to administer. The Department would have to execute contracts with each siteowner, with each utility, with each affected State or Indian tribe, and with each project management and remedial action contractor.

In addition, it would force us to operate in a licensee relationship with the NRC, which is abnormal to our normal way of operations.

Our experience with the current project indicates that disciplined project schedule and cost control would become very difficult under these circumstances. It would involve an increased number of management interfaces, many of which would involve comment and approval rights, and it would make the project very, very difficult to control.

We would suggest that a simpler approach is needed to avoid the large uncertainties in the cost and time required, and a preferred approach would be to leave the responsibility for reclamation to the millowners, to be carried out under their license, consistent with existing law.

The act would also establish a uranium mill tailings fund not unlike the mechanism now required for the nuclear waste fund, and such a fund would require that we in the Department establish

a sizable financial management organization, which would further add to the overhead costs and complexity of the project.

Additionally, the proposed fee on power generated by the utilities as a major contributor to the cleanup costs is intended to spread the costs over a wide base and to reflect the status of these utilities as benefactors of the process that generated the tailings. It appears to us that the proposed fee does not distribute the costs completely fairly and equitably.

First of all, about 14 to 15 percent of the uranium mined and milled in the last 10 years has been marketed overseas, and as such the domestic industry would contribute to the fund while foreign generators of electricity from nuclear power would not.

Second, it is very difficult to draw a direct relationship to the cost of electricity generated and the amount of tailings to be cleaned up. It is dissimilar from the waste fund in this regard.

If I take the experience we have gained with title I, Mr. Chairman, and based on the current estimates we have of the quantity of tailings associated with these sites and make an extrapolation from our existing experience, we would estimate the total cost for cleanup of the active total title II sites to meet existing EPA standards could approach \$4 billion plus additional costs for thorium tailing sites. That is a very high number and higher than anybody has estimated, but that is the best we can do based on our actual experience.

This cost could probably be reduced by 30 or 40 percent without the Federal control and management of the projects.

That estimate does not include the cost associated with vicinity property cleanup, because no estimates have been made of the extent of offsite contamination at those sites. We would judge, however, that such contamination of vicinity properties is considerably less than that associated with the title I sites.

Against this background, let me offer the following conclusions and recommendations:

Consistent with the original intent of Public Law 95-604 and based on our experience to date with the title I program, we believe the basic approach originally outlined by Congress for the title II sites remains valid.

We believe that licensed sites, as they reach the end of their useful lives, should continue to be the responsibility of the owner or the operator. In addition, we consider that the sites can adequately and more effectively be decommissioned and the costs controlled by the owner and the operator rather than reassigning this responsibility to the Department of Energy.

We are sympathetic, and we recognize the need to solve a difficult problem, that faces all of us, but we would propose that both subcommittees reconsider the proposed legislation in light of some of the facts and issues that we have raised here today.

We stand ready to provide any further information or advice that would assist the staffs in formulating a program that we think might more appropriately meet the overall objectives for this effort.

Mr. Chairman, this concludes my statement. Mr. Baublitz and I would be pleased to respond to any questions that the members may have at this time.

Mr. DOMENICI. Thank you very much, Mr. Secretary.

I really can't believe that you are seriously recommending that we let the industry pay for all of this cleanup. That sounds very nice. Frankly, it sounds sort of like our national policy with reference to uranium mining. It is no solution at all.

I will predict that within a month and a half that under the existing law the uranium industry of the country will be declared nonviable. Under the most strict of interpretations it has finally gotten unavoidable.

To follow that suggestion is to leave the States, including mine, Wyoming, Colorado, and three or four others, just saying we will wait around maybe 15 or 20 years from now and somebody will find a way.

While I appreciate your analysis of it and some of your suggestions, I think in that regard there is no solution other than to find some broad-based way of paying for it. I don't know how the utilities and/or the mining industry would individually pay for the disposal of nuclear waste.

Following your logic, one could just say, well, they've got it all around there and let's just punt and let them find some way to get rid of it. You haven't done that. The Federal Government has put on a small fee and used the power of the Federal Government to try to find some way to collectively pay for it and find a depository for it.

With reference to the costs, I frankly believe whoever did that work for you has done it entirely inconsistent with the facts. If you follow your own graph, it is obvious that the small deposits cost much more than the large ones per unit. That is true, is it not?

Mr. BAUBLITZ. There is a some possibility of some savings associated with economies of scale, Mr. Chairman. Our estimate was based on a simple presumption, because we didn't really have a good way to do it otherwise; namely, that the average cost of cleanup for the active sites overall would be comparable to the average cost that we had experienced with the inactive sites.

Mr. DOMENICI. That's the problem. If you will just look at your own graph, you will find that the cost is tremendously higher for small deposits under the existing act than for large ones. If you follow it a little further, you will find that a far larger percentage of the active ones are large as compared with the opposite under title I. We followed your own reasoning and reduced the cost from \$4 billion to \$1 billion. I am not predicting that this is right or that you are right, but clearly wrong averages are used when you compare apples and oranges.

Why shouldn't the Federal Government pay part of this, Mr. Secretary? That is one of the shares we have concluded here. They paid for all of the inactive sites. Why shouldn't they pay for part of this?

Mr. VAUGHAN. Mr. Chairman, we are paying for the inactive sites, first, because Congress enacted a bill and decided to appropriate the money. Second, by and large, those costs were entirely for Atomic Energy Commission activities.

We are very concerned with the precedent. While you cited that operators of nuclear utilities and other people in the commercial business are not responsible for the waste, they are responsible for including and funding the cost of cleanup of their sites under their

licenses. That indeed appears to us to be the premise of the existing title II of the act.

Mr. DOMENICI. The problem is that the facts have changed dramatically and there is no viable industry around to pay. Perhaps we could find some way to prove that to you and then maybe you would address the issue of how we ought to pay for it and whether some overall plan is reasonable or not.

Let me just ask one last question.

Do you really believe, based on what you know, that if we do not find some pool of resources and some collective, collaborate way to stabilize these active piles that they will be done under title II of the existing law? Can you tell this subcommittee you think this will happen?

Mr. VAUGHAN. Mr. Chairman, I am not in a position to comment on that because I don't have detailed knowledge of the resources of the individual companies who own them or of their alternatives.

Mr. DOMENICI. In any event, if the Atomic Energy Commission used 30 percent of the uranium that caused these tailings, you are telling us that you don't think that even 30 percent is a responsibility of the Federal Government at this point?

Mr. VAUGHAN. As we interpret it, according to the existing law it is not.

Mr. DOMENICI. That wasn't my question.

Mr. VAUGHAN. And separately, as you may be aware, there is certain litigation currently underway on that subject, and I think it would not be appropriate for me to comment on that such as to prejudice that litigation.

Mr. DOMENICI. Congressman Lujan.

Mr. LUJAN. Thank you very much, Mr. Chairman.

There is one thing that has bothered me all through these clean-ups, whether it is the abandoned tailings sites or these active ones, and that is in the 1978 act we have a provision that says that methods other than burying it should be considered. Just covering it up right there or moving it to some other place is just going to cause us problems further on down the line. So when we were considering the 1978 act one of the amendments that I offered was that other methods like mining that mill tailings pile be considered.

At that time I was aware of Ranchers Exploration & Development Co. doing some extraction from the mill tailings—I guess that was in Grand Junction—and taking out uranium from them. That kind of led me to believe that all of the objectionable parts of the mill tailings could be removed. But we haven't moved at all in that direction in trying to find some way other than burying it. Has DOE done anything about alternative methods?

Mr. VAUGHAN. We did explore, Congressman Lujan, the possibility of reprocessing the piles to try to gain some value, but there was not enough commercial interest in terms of the return on the investment.

Mr. LUJAN. But I am not talking about commercial interests. If you are talking about spending \$4 billion just to bury them and for them to crop up at a later time to give us some problems, couldn't that \$4 billion be spent on just cleaning up the piles and then use



the sand to pave highways, or build airports, or whatever we might be able to build with them to make them nonradioactive?

Mr. BAUBLITZ. Mr. Chairman, the interpretation placed on the direction in the act was to look into the viability of reprocessing. We carried that out, as Mr. Vaughan has indicated, by determining commercial viability, by asking the commercial marketplace whether or not there was a basis for pursuing that, and we got no responses of any kind.

A more detailed look has recently been made in that regard for the pile in Durango, because it has a higher content than the other piles and has the greatest potential of all the inactive sites. Reprocessing doesn't eliminate the waste; it can reduce the waste. The total cost of the entire process for reprocessing and then disposal of the remaining waste still exceeded by a significant amount the costs of simply carrying out the disposal within EPA standards.

Mr. LUJAN. The study was simply asking the various commercial entities are you interested, and when they said no that was the end of the study. Is that what you are saying?

Mr. BAUBLITZ. That was the first phase; yes, sir. That was our basis for determining commercial viability. We felt if there was some commercial viability to this idea that the marketplace would pick up on it and proceed to make proposals to the Department to reprocess tailings for its commercial value. As I say, recently we looked specifically at Durango in terms of the extra cost to the Government of taking that route, and it turned out to be quite a bit more expensive.

Mr. LUJAN. What else did you do? Did you take a part of the pile and try to take out the stubborn properties in it? I am trying to find out what you did.

Mr. BAUBLITZ. The idea was to create a reprocessing capability for the Durango pile at a site in the general vicinity, termed the "Long Hollow," one of the sites identified by the State that could be useful for that purpose, and carry out a reprocessing activity at that location and regain some value associated with the uranium produced as a result.

Mr. LUJAN. That would be just a small portion as offset perhaps.

Mr. VAUGHAN. Mr. Lujan, I think one question you are asking is, in essence, can you purify or filter the pile, and that does not seem to be practical.

Mr. LUJAN. I understand your answer, but I am trying to find out how you arrived at that conclusion. One, you tell me you asked the people if they would do it, and they said, well, no. Two, you thought about it and you said, well, no, that's not very viable. Did you conduct any kind of a test of any kind to show it would just be too expensive, that it would eat those \$4 billion that we are talking about now? I am concerned that we are just moving it off to a later date and that 30, 40, or 50 years from now we will be back here looking for solutions to the problem again.

Mr. BAUBLITZ. I think there are two answers to that, Mr. Lujan. The first is I believe we did in fact do a legitimate and thorough analysis of that option for Durango, which has the highest probability of success in that regard of any of the 24 piles. Our conclusion was that it simply was significantly more expensive, because the extra costs associated with reprocessing far exceeded the value

of the uranium. We then extrapolated that conclusion to the other sites, because they have much poorer richness in tailings.

In terms of the need to revisit the problem, I feel very confident about that. It was clear in the initial legislation and the legislative history that Congress did not want this problem to be revisited, and EPA established standards for use in that regard on that basis. We believe those standards will be fully adequate to provide protection for the long term.

Mr. DOMENICI. Thank you, Representative Lujan.

Senator Simpson.

Mr. SIMPSON. Chairman Domenici, I have just a couple of questions.

We have provided in this bill that the State may, with the agreement of the Department of Energy, elect to perform cleanup and stabilization activities at individual sites in lieu of having DOE perform those activities. Will the Department have any objection if the State wishes to take this course of action, and would the Department be willing to support those states that wanted to conduct those activities on their own?

Mr. VAUGHAN. If the legislation were passed, Senator Simpson, we would have no objection to that approach, and some of those approaches are now being taken in at least one case in the present program.

Part of the reason the costs are so high, frankly, is the layering of overhead, the fact that there are so many organizations that have to agree, the fact that in order to pacify some of the local communities we are going to have to agree to move the tailings rather than stabilize them in place, even though it is technically acceptable. There also is extensive surveying and other overhead costs associated with doing this work to meet the EPA standards. But we would not object, if the legislation were passed to state control.

Mr. SIMPSON. Let's say if DOE were to perform the actual cleanup, would you be willing to comply with all applicable State requirements governing cleanup as well as the applicable NRC requirements, including requirements of, say, a nonagreement State such as the one that I represent?

Mr. VAUGHAN. Senator, if the law were passed and we were requested to do it, we would do the very best we possibly could to reach agreement with all parties that were involved. That is what we are currently doing under the present program.

Mr. SIMPSON. All parties except the EPA?

Mr. VAUGHAN. No. We're complying with the EPA standards.

Mr. SIMPSON. I don't know what is happening with the EPA and the DOE and the NRC, but that will be an interesting exercise all in itself.

Thank you very much.

Senator DOMENICI. Mr. Secretary, some of the representatives did not get to inquire. As you know, they not only had to leave to vote, but some had to go make opening statements at other committees, and I am sure they are going to be back shortly. I don't want to overburden you, but I am wondering if we could go on to the next witness and ask you to wait just a few minutes and see if any of them would like to call you back.

Mr. VAUGHAN. We would certainly be pleased to do that.

Mr. DOMENICI. Before you leave, Mr. Secretary, let me say this to you in my closing remarks. I understand how cumbersome the process seems to be to you and how difficult it has been under Title I to get things done. Frankly, if you would come before this joint hearing or the committees over in the Senate and tell us that perhaps it is too cumbersome, too long delays and maybe even too expensive, I for one could tell you that that would be rather constructive testimony.

I continue to be very disturbed at a departmental policy, a secretarial policy with reference to a significant remnant of nuclear energy and the nuclear age that sits there unattended. I am particularly concerned when I know that it is a departmental position, a Presidential position that we move ahead with the use of nuclear energy. Clearly, that is the position of your boss.

To come in and give us very little by way of constructive thinking about that problem, seems to me to just invite more of what we have had in the past couple of decades in terms of opposition to nuclear energy.

I for one think the sooner we get on with proving we can do these kinds of things and getting them done and recognizing reality the much better chance we have. I am among those of us who think it will be one of our greatest mistakes if we don't continue on with nuclear energy in this country.

So I am somewhat disheartened. I am hopeful we can confer with you as we markup this bill and perhaps get some constructive suggestions from you.

Mr. VAUGHAN. Clearly, I share your views on the need for the future of nuclear power, as we have talked about before in other hearings. It is a difficult problem, and as I offered in my testimony, we are willing to work with you and the staffs of both Houses to do whatever we can to be constructive.

Mr. DOMENICI. I am going to ask just one question of you. If you will, answer it at your convenience. We have taken your analysis and your graphical depicting of the costs and we have put our estimates up along side of it in terms of what the active sites might cost using the same kind of analysis.

I will submit that analysis of your graph and the chart accompanying with the costs and ask you for your comments with reference to whether or not our staffs have made some errors or whether or not it is as relevant and reasonable as your \$4 billion estimate. If you would do that for us, we would appreciate it.

Mr. VAUGHAN. We would be pleased to do that, Mr. Chairman. I would reiterate that what we tried to do in coming up with the estimate was an outside upper limit of the costs, because we have all been guilty of underestimating in the past. So we wanted to show both extremes.

Mr. DOMENICI. I understand.

Mr. VAUGHAN. Thank you very much.

[EDITOR'S NOTE.—In response to Mr. Domenici's question, the Department subsequently supplied the following information:]



## TITLE II COST ESTIMATES

The following is our analysis of the two approaches for estimating the cost of stabilizing the uranium mill tailings at the licensed sites under H.R. 2236, together with some further comments as to the uncertainties included in any estimate made at this time.

Methods

The Department's upper limit estimate was made on the basis of the comparability of the proposed program with the UMTRA Title I program for the inactive sites and assumes a direct proportionality between overall program cost and the quantity of tailings to be stabilized. Thus,

$$\frac{\text{Maximum cost of proposed program}}{\text{Tons of Licensed Tailings}} = \frac{\text{Maximum cost of Title I program (excluding vicinity properties)}}{\text{Tons of Title I tailings}}$$

$$\frac{\text{Maximum cost of proposed program}}{173 \text{ million tons}} = \frac{\$635 \text{ million}}{25 \text{ million tons}} = \$25.4 \text{ million per Mt}$$

$$\text{Maximum cost of proposed program} = \$4.4 \text{ billion}$$

The estimate prepared by Subcommittee staff also assumes comparability between the programs, but takes into account potential economies of scale. In this approach, the estimated cost per ton of tailings stabilized at each individual UMTRA site is plotted versus the tons of tailings at that site, a curve is drawn through the resulting field of points, and this curve is then extrapolated into the range of the higher quantities of tailings present at many of the licensed sites (Figure 1). This curve is then used as a basis for estimating the unit cost (cost per ton) for each of the licensed sites, and the total cost for each site is calculated. This approach yields a total estimated cost of approximately \$1 billion.

#### Comperison and Analysis of the Methods

The Department's estimate may be considered to represent an upper limit, and, as noted in our prepared statement, some reduction relative to the UMTRA experience might result from economies of scale. While the Subcommittee's approach, which takes this factor into account, appears basically sound, two factors involved in its implementation may result in the estimate being somewhat low.

First, the method is strongly dependent on the drawing of the curve of unit cost versus tons of tailings. The curve used in the Subcommittee's estimate does not fully take into account the unit costs for the four large UMTRA sites expected to be relocated, namely: Salt Lake City, Utah, and Grand Junction, Rifle, and Durango, Colorado. The extent to which these points should be taken into account depends on the potential need for relocation of the licensed sites. From discussions with the NRC staff, we understand that the need to relocate any of the licensed sites appears unlikely based on technological considerations. On the other hand, our experience in administering the UMTRA Title I program indicates that socio-political forces can play a strong role in such determinations, but we are not in a position to make an assessment of the likelihood of such issues arising in connection with the licensed, Title II sites.

A second factor causing the Subcommittee estimate to be potentially low is that, in calculating the costs for the licensed sites, Subcommittee staff did not take into account the contaminated soil and sub-soil present at the sites in addition to the tailings. In the case of the UMTRA Title I program, it is estimated that there are 9 million tons of such materials in addition to the 25 million tons of tailings, thus increasing the total amount of materials present by about one-third. The importance of this increased quantity is largely dependent on whether the tailings and contaminated materials need to be handled, either for purposes of relocation to a new disposal site or to permit the installation of a liner to protect groundwater.

#### Further Uncertainties

Current plans and estimates for the UMTRA Program do not contemplate the need for programs of groundwater restoration. Since the UMTRA Title I estimate is the base for both the DOE and Subcommittee estimates for the licensed Title II sites, this factor is not reflected in either estimate. We have discussed this point with the NRC staff responsible for the licensed sites who have advised us that some groundwater contamination has been detected at most of the licensed sites and that the required programs of restoration could be quite extensive and expensive. The degree to which restorative actions will be required will depend on interpretation of the EPA standards. This matter is now under consideration and discussion.

The proposed legislation addresses thorium sites as well as uranium sites. Neither the DOE or Subcommittee staff estimates include such sites. Discussion with NRC staff indicates that at least two such sites would fall within this authorization.

Summary

Because of the above uncertainties, it is not possible to assess with any degree of confidence which estimate is more appropriate for assessing the financial commitment involved in the proposed legislation. Apart from the uncertainty of the increases inherent in the potential need for groundwater restoration, it appears that the cost will be within the range of the two estimates.

As emphasized in our testimony, we believe that approximately 30 to 40 percent of the total cost could be saved by eliminating the management role for the Federal Government.

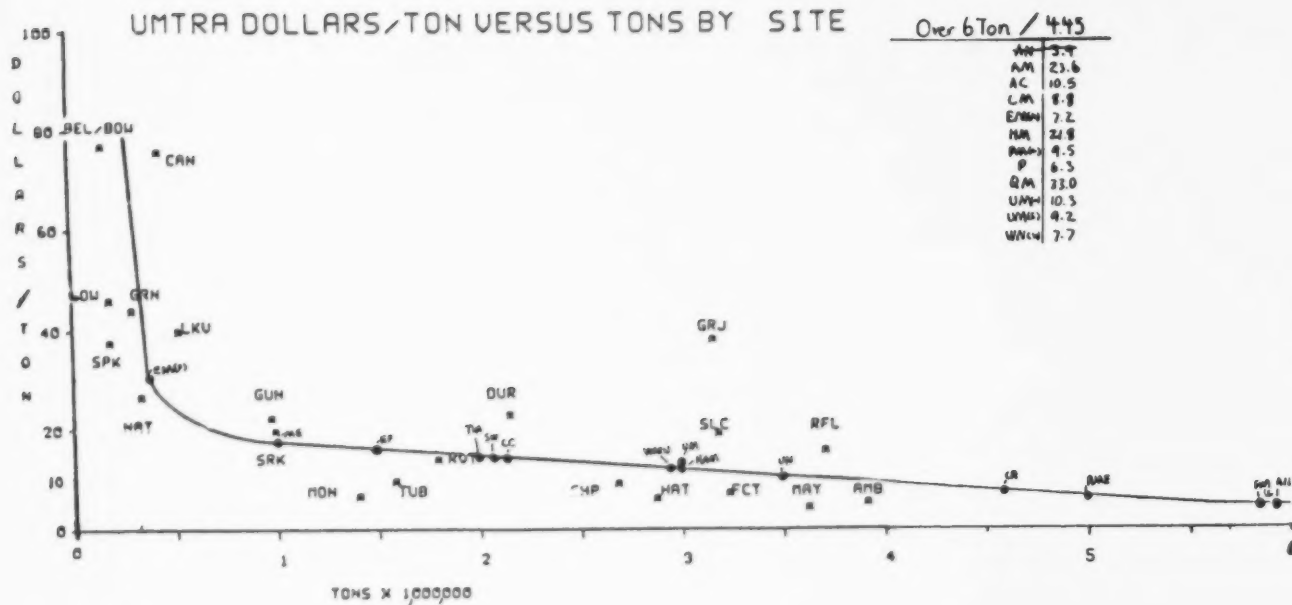


figure 1

Mr. DOMENICI. Thank you very much, Mr. Secretary. If you would stay just a while, we will find out whether you are going to be needed.

Now I will call on John Davis, Director of the Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission.

[Prepared statement of Hon. John G. Davis may be found in the appendix.]

**STATEMENT OF HON. JOHN G. DAVIS, DIRECTOR, OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS, U.S. NUCLEAR REGULATORY COMMISSION, ACCOMPANIED BY DALE SMITH**

Mr. DAVIS. I am pleased to be here today to provide the Nuclear Regulatory Commission's views on the bills in question.

Mr. DOMENICI. Would you identify the person that is with you, please.

Mr. DAVIS. Accompanying me is Mr. Dale Smith, who is head of the NRC Uranium Recovery Field Office in Denver.

Mr. DOMENICI. Thank you very much. You are welcome, Mr. Smith.

Mr. DAVIS. I will present a summary statement. I would ask that my prepared testimony be made a part of the record.

Mr. DOMENICI. Without objection, it is made a part of the record.

Mr. DAVIS. As an independent regulatory agency, and with respect to the proposed bill, the Commission is chiefly concerned that its responsibilities are clearly defined and that sufficient authority and resources are made available to carry out those responsibilities. My comments today will be directed toward those concerns.

I would like to note that the NRC has previously responded to written questions to these bills.

As written, the bills leave us unsure as to the actual intent of certain provisions as they may apply to the NRC. For example, a principal feature is a provision for licenses at active sites to be transferred to the Secretary of Energy before site closure.

The legislation would transfer the NRC license to the Secretary no later than the date on which the Secretary begins reclamation and decommissioning activities. It is not clear whether the bill intends that the Department of Energy assume the same role as the NRC licensee it is replacing and thereby carry out the details of the licensee developed and NRC approved reclamation plan under NRC regulatory oversight.

Also, since the legislation specifies that DOE is to select as well as perform reclamation, decommissioning or other remedial actions, the bills can be read that DOE is allowed to revise the licensee's NRC approved reclamation plan after DOE assumes the license. The transfer of the license from the NRC licensee to DOE can be read to mean that DOE stands in the place of the former licensee and becomes at that time an NRC licensee. If this is the intent, NRC believes it will have the same regulatory authority over DOE as it did over the previous licensee, including the same authorities to approve actions of the DOE licensee and to enforce existing license conditions as well as Commission regulations.

The requirement that a license issued by an agreement State be transferred to the Secretary of Energy raises a significant issue.

Unless the legislation either provides for State regulation of DOE or makes provisions for the Nuclear Regulatory Commission to reassume regulatory authority for the license in question, the transfer could not be effected if it is intended that DOE become a licensee because an agreement State does not now have authority to regulate a Federal agency such as DOE.

In conclusion, we believe that greater clarity in the intended regulatory relationship between the NRC licensee, the NRC, the DOE, and any involved agreement state is important for the successful accomplishment of the provisions of the bills should they become law.

Mr. DOMENICI. Thank you very much.

Senator Simpson, do you have any questions?

Mr. SIMPSON. Mr. Chairman, I will submit my questions in writing to the witness. Thank you.

Mr. DOMENICI. Congressman McCain, do you have any questions?

Mr. MCCAIN. Yes; I do, Mr. Chairman. I will attempt to be brief.

I appreciate very much you and Mr. Richardson having these hearings. I think it is a very important issue and one that is long overdue as far as being addressed.

My questions probably were to the previous witness and Mr. Vaughan could possible respond in writing to these.

I think we are getting down to the one of the most crucial issues here, which is who is going to pay and how much. We now see the nuclear industry contributing to comply with the Price-Anderson provisions in order to assure that in case of nuclear accident there will be proper funding. We have the nuclear industry currently taxed for the nuclear waste fund. Proposals exist to tax them for mill tailings. Acid rain control—I just came from a hearing to tax them for that. I understand that the House budget conferees proposed a tax yesterday to fund the Nuclear Regulatory Commission.

I wonder if we might look at some point as to what we are doing to an already dead industry, for all intents and purposes, and what we will be doing to the ratepayers in those areas where there are nuclear powerplants functioning. I wonder if that had been a factor in considering some of these proposals.

Maybe that is not in your area of expertise, Mr. Davis.

Mr. DAVIS. Mr. McCain, basically as an independent regulatory agency our principal concern is a clear definition of what the congressional intent of our role is under this particular bill. We have not examined the aspect you have raised.

Mr. MCCAIN. Perhaps Mr. Vaughan could provide us some estimate on that.

We also are deeply disturbed at the fact that the United States once had a virtual monopoly on the fissionable material industry and now we are down to around 40 percent. Is that correct, Mr. Davis? Are those numbers correct as far as the U.S. share of uranium is concerned?

Mr. DAVIS. I believe that would be better directed to the DOE witness also, Mr. McCain.

Mr. VAUGHAN. Mr. McCain, I think you were referring to the share of uranium enrichment services that are provided, and our current market share is about 47 percent.

Mr. MCCAIN. Thank you.

There is one other aspect of this when we talk about who pays. It appears that the new policies, whether we like it or not, have to do with cost sharing on the part of the States. We have been asked to share to repair our dams, as much as 25 percent; we are being asked to share for new construction of water facilities in the State of Arizona. Some estimates are as high as 50 percent. I see nowhere in these proposals for cost sharing on the part of the affected States. I believe that that is going to be an area that is going to be discussed and one that is going to be looked at very carefully.

I do not have a proposal, Mr. Chairman, for cost sharing, but it appears to me if we are cost sharing on all these other issues that cost sharing has got to be a factor to be included in the calculations as to how we solve this very serious issue.

Thank you, Mr. Chairman.

Mr. DOMENICI. Thank you very much, Representative McCain.

Let me just say to our friend from the Nuclear Regulatory Commission, in response to an inquiry by the Congressman from Arizona you said your only interest here was to seek clarification and make sure that your responsibility in relationship to others was clear. I applaud your motive and your reason for being here. I would only say that if we were able to do that it would be miraculous. We haven't done that very often on anything that EPA, NRC, and DOE get involved in. By the time we are through we claim we know what we did, and clearly we hope after 4 years and 20 lawsuits and 63 interventions by citizen groups that somebody will tell us what we did. I am hoping to do better this time. We will try.

I thank you for your great statement of hope.

Mr. DAVIS. Thank you.

Mr. SIMPSON. Mr. Chairman, may I ask if we might change the order of the two panels here and go to the panel of Mr. Paul Robinson and Mr. David Berick at this point. I have more questions of them. I hope to stay for the second panel, but I have a commitment in the Senate a little before one.

Mr. RICHARDSON [presiding]. That is fine.

Our next panel will be Mr. Paul Robinson, the research director of the Southwest Research and Information Center, and Mr. David Berick, the director of the nuclear waste and safety project, from the Environmental Policy Institute.

Mr. MCCAIN. Mr. Chairman, I have some questions for the witness from the Department of Energy. I request that I be allowed to submit them in writing.

Mr. RICHARDSON. Without objection. I have some questions also that we will both submit for the record.

Gentleman, as you know, we are moving rapidly. Your statements will be fully inserted in the record, and we ask you both to summarize.

Prepared statements of Wm. Paul Robinson, with attachments, and David Berick may be found in the appendix.]

Mr. RICHARDSON. Mr. Robinson, please proceed.



**PANEL CONSISTING OF WM. PAUL ROBINSON, RESEARCH DIRECTOR, SOUTHWEST RESEARCH AND INFORMATION CENTER, AND DAVID BERICK, DIRECTOR, NUCLEAR WASTE & SAFETY PROJECT, ENVIRONMENTAL POLICY INSTITUTE**

Mr. ROBINSON. Thank you, Congressman Richardson, members of both committees. Thank you for the opportunity to appear.

I would like to use my 5 minutes available to make a number of points which I think apply directly.

One starting point is to cite the chairman of the House Interior Committee, noting that the 1972 Mill Tailings Act was designed to put the cost of mill tailings control for perpetuity squarely on the shoulders of the licensees, and that that is the system that Senators Domenici and Simpson and Mr. Lujan and others, including our organization, were part of 7 years ago. We think that that is where the appropriate costs for decontamination, decommissioning, and reclamation of uranium mill tailings lies.

We believe we can demonstrate that the current low level of domestic uranium production has very little to do with the viability of the uranium market in the country. Certainly none of the reactors have any trouble finding economical uranium, and the uranium operators have been paid, at least in New Mexico, well above the oft reported spot market price of under \$20. Homestake recently received a payment to obligate a contract for uranium at well over the \$40 a pound range.

There has been no showing that these operators are in difficult financial straits. There are a lot of complaints. The balance sheets of these firms, who include units of Exxon, Kerr-McGee, ARCO, and other oil majors and diversified firms, certainly do not show a severe problem. Kerr-McGee, the largest uranium mill tailings owner in the country, recently wrote off about \$45 million in reclamation costs in a recent quarter balance sheet. There does appear to be no financial limitation.

The operators, as Senators Domenici and Simpson realize, have not liked the standards that have been developed under the act and have attempted to modify those standards, and while awaiting a decision on one of the litigation matters have tried to reduce their costs of reclamation approximately 85 percent. We feel that that is an inappropriate distribution of the costs. The utilities have certainly paid and paid well for the uranium.

The Federal Government has paid for about 30 percent of the uranium and may be appropriately responsible for the cost of the tailings reclamation from that 30 percent, but the extensive ground water contamination at more than 20 of these sites as well as the vicinity sites is certainly not, in our view, a reasonable part of the Federal share.

We feel that any Federal contribution should be tied directly to the tailings which were produced under Federal contract, not 30 percent of the fund. As we are seeing from DOE's numbers on the inactive sites, the numbers for uranium mill tailings costs have escalated dramatically.

Without knowing what the Senators' staff will come up with in their numbers, we do know that the cost of ground water cleanup at sites, including those like Homestake, Anaconda, United Nucle-

ar, and other important uranium operators, will be a substantial cost, and the volumes of those materials are not included in the DOE numbers. DOE is only addressing the costs of the tailings themselves, not the active site as defined in the Mill Tailings Act.

What we recommend is that the existing Mill Tailings Act, which was the subject of significant debate and discussion, serve as the framework for the handling of the active tailings sites. It outlines the procedures; it outlines the responsibilities; it is a subject which was handled in great detail.

We feel that the consideration of a Federal share in tailings costs may be appropriate to consider in line of an amendment to the existing act, not setting up a new act. We find that the efforts by both House and Senate Members to not mess with the standards in the Mill Tailings Act certainly has not been successful.

The Mill Tailings Act is not referred to in the new language. The various references to EPA standards prescribed or NRC standards imposed demonstrates the bias of the view of the drafters of the legislation. We feel that the references to the existing language is a much more balanced approach reflecting what has already been done.

We feel that, like the chairman of the Interior Committee, adopting this act would be changing the rules in midstream. We have almost completed much of the litigation associated with the Mill Tailings Act, and were we to change the rules, we would open up a door for another 7 to 10 years of extensive challenge. That, we do not think, is going to help clean up tailings in a timely manner.

During the litigation over the last 7 years we have seen operators continuing to add tailings to sites which have very bad records of ground water contamination. The operators have not learned their lesson from 1978 or from other problems and are continuing to add tailings to the piles which have demonstrated ground water contamination. We don't feel that that is the sort of record that recommends one reducing the cost by such a dramatic fraction.

We would recommend that the financial situation of the uranium industry be addressed in some detail by congressional research staff, that the question of the financial ability of the industry to pay is very different than the viability of uranium production, and that would be a worthy area of review.

Certainly the standards applied by EPA represent the same standards as other impoundments are required to address, and addressing the specific technical standards would be appropriate.

Our final recommendation would be that the agreement State program within NRC be assessed so that we can determine if the programs in the agreement States, of which my home State of New Mexico is the most significant, are being implemented at a level compatible to the NRC.

We feel that those are the areas of inquiry which will improve the program, and that change of the rules in the middle of the ballgame, adopting new language referring to standards, is not going to help clean up; it's only going to delay the operation.

Thank you again for the opportunity to present these views.

Mr. RICHARDSON. Mr. Berick, let me just once again make a plea for brevity. Senator Simpson has to leave at 12.50, and I know my

colleagues here have questions, as I do, and I would appreciate it if you could summarize as rapidly as possible.

Mr. Berick.

Mr. BERICK. It has been suggested, Mr. Chairman, that I just simply say that a lot of our testimony agrees with DOE and leave it at that. But let me just make a few comments.

I am David Berick, representing Environmental Policy Institute. I want to thank Chairman Udall and Chairman Domenici for the opportunity to testify here today.

Mr. Chairman, 7 years ago this month I testified on the legislation that was to become the Uranium Mill Tailings Radiation Control Act.

I think a lot of us had a lot of assumptions about what was in that act, what was supposed to be in that act, what was supposed to have happened over the last 7 years. I don't think any of us on any side of the table think that the last 7 years has resulted in those assumptions being fulfilled.

But regardless of those assumptions, I think it is important to focus on what the 1978 act says, and what the 1978 act says is that for inactive sites the Federal Government and the taxpayers and States were going to be responsible for the cleanup, and all other sites, the existing sites and new sites, were going to be the responsibility of the uranium companies.

We really would have to disagree with the fundamental premise of the proposed legislation that there is no comprehensive mechanism for financing the cleanup of tailings at the existing sites. There is a mechanism. The 1978 act makes it clear that such a mechanism exists. I think we are here today largely not because the mechanism doesn't exist, but because the financial situation that the uranium industry is in means that they don't want to go through with the original funding mechanism.

I want to emphasize that it is not just funding that we are concerned about here. We are also concerned about responsibility. Who is going to be responsible for the tailings during operation, after operation?

To point out that the legislation that we are looking at today makes some very fundamental changes in the regulatory program and operating mills, we are looking at removing the long-term liability, and I think that raises serious questions about the short-term liability and responsibility for the operational stage.

Very quickly I want to address a couple of issues.

One is whether or not Federal intervention here is really going to further reclamation. I would really have to echo a lot of the comments made by the Department of Energy that there is nothing inherent in the Federal program for reclamation that makes it a better reclamation program.

As Mr. Vaughan pointed out, there are a lot of obstacles that we are going to add here to reclamation, delays that are certainly going to come. If people are interested in rapid reclamation, this legislation is not going to produce it.

We are going to be constrained by necessity to set up a whole DOE program; we are going to be constrained by necessity to go back and revamp the entire regulatory regime, EPA, NRC, the States; those licenses that the individual licensees have are going to have

to be revamped before they can cease operation and turn the sites over; and we are not talking about smooth sailing simply by turning this program over to the Federal Government.

As Mr. Davis pointed out, there is what I have referred to as the regulatory twilight zone. We will be creating in this area a transition from clear licensee responsibility with clear regulatory control by NRC in the agreement states to a gray area where it is not clear who is going to be responsible for long-term hazards that occur during operational stage, how we are going to physically be able to transfer license conditions to the NRC.

As all of us know, we have just been engaged for 7 years now—actually 6½, I guess—in protracted litigation and discussion about the regulations. We are about to go through that all again if this legislation passes.

Finally, I want to talk about the funding mechanism itself.

As Chairman Udall and Chairman Domenici know, one of the critical things of the high level waste program that we have supported is the establishment of that high level waste fund. We think there are some fundamental principles in that fund that make the waste program a sound program, which is that a utility's ratepayers pay for the waste that they actually generate. That is not really present in this formulation. Ratepayers are not going to be paying for wastes they actually generate; they are going to be paying for somebody else's waste. The principle of fairness in the high level fund simply isn't here.

As for the Federal share, we are willing to look at it, although we do not concede that the Federal Government may, in some cases at specific mills, be responsible for some kind of assistance. But to have an across-the-board Federal commitment to pay for cleanup at sites and for mills where there were no Federal purchases really begs the question of fairness.

Finally, in conclusion, Mr. Chairman, although the experience of the last 7 years would argue against it, we are willing to discuss a range of issues involving whether or not the 1978 act is going to fulfill the purpose of making sure that there is timely and adequate reclamation.

We are willing to discuss the specific problems, the specific mills in meeting NRC and EPA regulations.

We are willing to discuss a process on a case-by-case basis for ascertaining whether the Federal Government should reimburse operators for commingled tailings.

We are willing to discuss establishing contingency plans, surety arrangements in case an individual operator is not going to be able to fulfill reclamation requirements.

We are willing to look at guaranteed loans or other cash flow mechanisms to assist operators in complying with reclamation requirements.

But we are not willing and we simply cannot discuss dismantling the regulatory program that was passed in 1978.

Thank you, Mr. Chairman.

Mr. RICHARDSON. Senator Simpson.

Mr. SIMPSON. Mr. Chairman, I do appreciate your assistance so I might get to this meeting on the other side.

I do have a couple of questions.

I note in Mr. Berick's testimony, on page 3, that you state that the blame for the regulatory delays and the controversy in the mill tailings program "rests with those who spent so much time trying to amend and manipulate implementation of the 1978 act."

out of three, and it would have been folly for us, given the industry's bent here to litigate and to block every single regulatory effort at the Federal level, to sit idly back and let the industry once again preempt us in court.

So we did try to race them to the courthouse. I think we got there about 11 minutes ahead of them. That was not successful and the case has moved to the ninth circuit where the uranium industry had already been in litigation for 4 or 5 years.

So I think that the record ought to show that we have not been the initiator of this litigative war to obstruct the regulatory programs outlined originally in the 1978 act.

Mr. SIMPSON. I think the record should show that it isn't a race to the courthouse; it is races to the courthouse. Because it happened in Denver too, and you were involved right in the middle of that.

I think the record ought to show, so that we don't completely sponge purity all over both sides, that the environmental organizations have been as robustly active as anyone else in filing suits to gain distinction upon distinction and case upon case to bring the industry to a halt, and filing suits against the regulatory programs. It just doesn't quite square.

I want the record to show, just out of fairness, that others are trying to manipulate the implementation of the Mill Tailings Act. So I think we ought to get that in there, and that is the purpose of my question.

Just one more, which is the issue of, if we get somebody to pay for it, we might get it done. We sure won't get it done any other way, not with NRC and EPA and DOE whacking around in it, all able to avoid responsibility and come up with some dazzling white papers and tomes about the issue.

You state that the equity of apportioning waste disposal costs in the high level fund is entirely absent from the Mill Tailings funding scheme. We're trying to hammer out something here. We don't get the luxury of just lobbing javelins into the air and stepping back to the downtown office. We've got to go vote every once in a while. So when we are talking about equitable apportionment of costs, what should we do when we have an industry such as the uranium industry engaging in an activity that results in environmental cleanup costs? What approach will provide us the greatest incentive for the industry to ensure that during their operation appropriate preventive steps are taken and in the event of environmental damage ensure that all necessary cleanup steps are taken?

I would like to have a rather thoughtful response to that, if I could, without the emotion and hype that goes with that.

Mr. BERICK. I would like to do that now and I would like to do it later at some future period, if you would be amenable to that.

Mr. SIMPSON. I would be very happy to visit with you in my office any time.

Where is equitable apportionment? That's your phrase.

Mr. BERICK. What we have said in our testimony is that the uranium companies as part of the 1970 act were held responsible for the long-term costs and to actually do the reclamation. We thought that was an equitable arrangement. In 1978 the industry, when it agreed to that arrangement, apparently thought so also.



Now, as I mentioned in my earlier statement, the health of the industry is such that we are now being asked to come back and revisit that basic arrangement. What we have said in our testimony is that we are willing to look at this whole question of commingled tailings on a case-by-case basis, and where an individual mill can be shown to have been responsible in some way for contracts to the Federal Government, that may be a basic point where the Federal Government ought to provide assistance. But for the Federal Government to come into mills where those tailings were never part of a Federal contract to us is not that direct equitable relationship.

We have also said that we are willing to look at ways of providing loan guarantees, or some way of providing financing so that the cash flow situation that the operators find themselves in can be stretched out, so they can meet the reclamation requirements.

We are open to looking at ways of making sure the reclamation gets done. What we are not willing to get into is sort of shifting this burden of who is responsible for the tailings disposal to somebody other than the original operators.

To get back to the last part of your question, that has some very fundamental consequences for how people operate those mills in the interim. If they know that at the end of 20 years or 25 years or when there is a major tailings sill or something that affects their facility they can walk away and they will no longer be responsible except to the extent that they mail in their check, we think that the absence of that long-term, this is where we are leaving our operation when we close the gate, is a fundamental consideration.

Mr. SIMPSON. You miss the fact of what the States themselves have done with their own environmental laws as if they had done nothing, which is absurd. Wyoming has very stringent regulation and reclamation requirements. You heard the Governor of New Mexico state that employment has gone from 7,000 to 200. Match that with Wyoming.

Things have changed. It is called change. If anybody believes that in these times while we are grappling with a budget deficit which is commanding all of our attention that suddenly we are going to go into a new funding scheme for uranium operators, that is absurd. That isn't going to happen in these times, a new measures of financing in that area from the Federal treasury.

If you dish up something better than that, I will be glad to listen to you and we can talk about it and see what we might resolve.

Mr. Chairman, I do very much appreciate your courtesy and the important effort of having this joint hearing. I respect you for it and thank you for it.

Mr. RICHARDSON. Thank you very much.

Mr. SIMPSON. I thank you. Maybe we can sit down and kick it around a little more. But let's kind of keep the stuff out about just one group is doing all these hideous things when you are playing the game just like we are. Leave the foul lines in the same slot while we all play the game.

Thank you.

Mr. RICHARDSON. Congressman McCain.

Mr. McCain. Thank you, Mr. Chairman.

Probably the fuzziest part of your testimony was what you just gave, I think some very weak testimony, that somehow we will



come up with some arrangement for loan guarantees of some kind. Did you have envisioned a Chrysler bailout? Did you have in mind that this country, facing \$200 billion deficits, is now going to focus our attention to providing some kinds of moneys for the uranium industry? Do you refuse, as you say, to listen to any idea about shifting the burden?

We are required to give some assistance or aid to a failing industry, not just because of the importance of uranium to this country, but also because of the human tragedy that continues to unfold, as Chairman Richardson has said. The bad part of your proposal, Mr. Berick, is that you want to lay an additional burden on an industry that cannot maintain that burden.

Along those lines, Mr. Robinson, on page 3 of your testimony you say "Certainly these large corporations have the assets and cash flows to afford cleanup bills ranging from \$30 million to \$130 million."

According to the GAO, on page 8 of their report to Chairman Udall, dated July 15, 1985, they state that "We estimate that utility contributions would total about \$500 million for the 10 years." Down below that, "The bills also stipulate that contributions to the fund will be made 55 utilities, 30 Federal Government, mill owners, 15." They go on to say, "Based on the above percentage, we estimate that the Federal Government and mill owner contributions to the fund for the 10-year period would total about \$274 million and \$136 million respectively."

[EDITOR'S NOTE.—The above-mentioned report may be found in the appendix under cover of a letter from J. Dexter Peach, Director, GAO, to Chairman Udall, dated July 15, 1985. See table of contents for page number.]

Mr. McCAIN. Mr. Robinson, in your statement you put their assets at between \$30 and \$130 million; GAO estimates that they will have to come up with \$136 million as a minimum. Are we going to now devote all the assets and profits of these various companies for this single effort?

Mr. ROBINSON. I appreciate the question. Mr. Chairman and Representative McCain, the firms which have provided surety for these bonds, surety required as early as 1973 for reclamation costs by the NRC, have included firms other than merely the mining subsidiaries. We are not talking about small firms here; we are talking about in many cases the holding company; the overall firm has provided the surety because the uranium division typically does not have resources. I am talking on page 3 about the individual firms and their representations as to the costs of their cleanup. That's the origin of the \$30 to \$130 million. I remember an officer with Kerr-McGee mentioning the \$130 million figure in New Mexico State testimony.

Mr. McCAIN. Please excuse me. If I could interrupt a second. You say "the operating licenses for the mills are \* \* \* held by the parent firms. Certainly these large corporations have the assets and cash flows to afford \* \* \* \$30 million to \$130 million." I believe you are talking about the corporations themselves, the way I read your statement.

Mr. ROBINSON. Those are the corporations who hold the licenses, Sohio, Exxon, Kerr-McGee.

Mr. McCAIN. And they are capable of far higher than \$130 in your estimation?

Mr. ROBINSON. Yes, sir.

Mr. McCAIN. Thank you.

Thank you, Mr. Chairman.

Mr. BERICK. Mr. Chairman, could I respond to the comment that Congressman McCain made to me about my testimony?

Mr. RICHARDSON. Yes.

Mr. BERICK. Congressman, what I was talking about in terms of loan guarantees is far less than the exposure that this legislation would create for the Federal Government. What this legislation creates is an open-ended commitment by the Federal Government to pay 30 percent of the cost of this reclamation program, however large this program is. We just heard an estimate from the Department of Energy that this program could be \$4 billion or so, not counting vicinity properties.

What we are saying is that we should not set up a situation where there are those open-ended liabilities when we can't demonstrate a direct connection to who is responsible for those particular costs. What we are saying is we are willing to try to recognize that the industry does have financial problems. We are looking at ways, such as guaranteed loans perhaps, for reclamation that would allow the industry to fulfill its legal obligations, its license obligations that they have agreed to already in many cases in their license.

I think we all want the reclamation to occur. But just to say it is a new burden—it is not a new burden; it's a burden that may be increasing in severity. We are willing to look at ways of trying to make sure that the reclamation occurs. But we are not saying you are now responsible for something that you weren't previously responsible for.

Mr. RICHARDSON. Congressman Strang.

Mr. STRANG. Mr. Robinson, how do you feel about a domestic uranium industry and nuclear power for the long-term future of this country?

Mr. ROBINSON. I think the uranium production industry, the miners and millers do have a long-term future. They don't have much of a short-term production future, and that is largely because they are meeting their contracts by buying on the spot market or buying from outside the United States. When you talk about gulf's uranium, are you talking about Canadian gulf or United States gulf?

Mr. STRANG. That's not my question.

Mr. ROBINSON. I think the uranium production industry, the uranium burning industry, the nuclear reactors, they are having no trouble finding uranium and they are finding it cheaper than anybody has estimated for the midterm.

Mr. STRANG. Do you feel that a domestic uranium industry is important for this country?

Mr. ROBINSON. It's important for this country; it's important for areas really close to my home; and we think that the current situation where there is no production is not a result of the regulatory system that we are discussing; it has very little to do with it. The

costs are less than 10 percent of the price of uranium at current contract prices.

Mr. STRANG. My problem comes from the disaster that the industry finds itself in where you have the scaling down in employment to the point where the industries really are going to just simply cease to exist. You can't turn on and turn off a mine, as you well know.

Mr. BERICK, your testimony seems to reflect a fairly strong anti-industry bias. Maybe it doesn't, but it sounded that way.

I believe, for example, that the public creates public problems and those merit public solutions. The question is how do you get at that. For example, Uravan [phonetic], an active site, 55 percent of the mill tailings are AEC tailings. What is your view of equity on the cleanup of that site?

Mr. BERICK. What we have said in our testimony and what I will say to you is that we would agree that we can look at a process for determining whether or not the Federal Government is responsible for that 55 percent. I think at Atlas it is closer to 77 percent.

Mr. STRANG. You are correct.

Mr. BERICK. But if there is a direct relationship of responsibility there that we can ascertain in some objective forum and we can demonstrate that the Federal Government is responsible, we don't have a problem with the Federal Government providing that proportion. That is different than the Federal Government saying we are going to be responsible for all the cleanup, some ratepayers in some other place that never bought uranium from that mill will be responsible, and that the operator only has to pay 15 percent of the costs.

What we are saying is let's apportion the costs on whom the responsibility rests for generating those tailings.

Mr. STRANG. Your testimony doesn't quite say that. Your words do, and I heard you say that to Senator Simpson. I heard some comment in your testimony about ratepayers. Do you mean by the ratepayers the utility companies?

Mr. BERICK. Yes.

Mr. STRANG. But who are the ratepayers, really? Who pays that? The consumer. That's where it comes from. There is no other place for a utility company to get any money but the consumers. So you are saying that we need to go back and lay a heavier burden on the consumer who is also the taxpayer.

I find basically some inconsistencies in your testimony. I think some of the things you say we really should look at, like measuring the extent to which those tailings were involved in AEC activity for defense purposes and so forth. But your written testimony seems quite strongly negative.

Mr. BERICK. It is negative in the sense that we think that in this situation the primary responsibility, as was established in the 1978 act, rests upon the uranium producers. What we argue in the testimony is that we don't really see a responsibility by ratepayers to pay for cleaning up mill tailings at a particular site. Those folks have already paid for their uranium.

The industry could come back and say we did not charge them enough. From a consumer perspective, for somebody to come back and tell you we didn't charge you enough for your automobile, we

didn't charge you enough for the oil that we sold you for your house—I mean, that is sort of the situation that we are in. I think that raises some very serious questions.

Mr. STRANG. I have no further questions, Mr. Chairman. I yield back.

Mr. RICHARDSON. Thank you very much, Mr. Strang.

Let me just say that I am not going to ask any questions because we have to move on.

I am disappointed by the testimony of two members of the environmental community. As somebody who has worked very closely with them over the years, it distresses me to hear some of your arguments, especially those that are factually incorrect, especially the statement that my bill is open-ended funding. If you look at section 12, my bill provides for \$290 million and that's it.

Talking about funding, the DOE has suddenly come up with a \$4 billion figure. Two years ago the estimate that we got in this committee was \$532 million for the cleanup of these sites. In some of the earlier questions we submitted to the NRC and EPA it was \$1 billion, and now it is up to \$4 billion. That is one of the concerns I have.

The second is an implication that the State of New Mexico, which probably has the most environmental Governor and the most environmental EID direction in the whole country, is perpetrating an injustice on its people and its ratepayers. That strikes me as being a little bit contradictory.

The issue here, it seems to me, is we have got to clean up these tailings piles; we have got to do something about this waste.

What you gentlemen have told me is that we have this sacred monument, this sacred structure, that this committee in the past with your consultation and lobbying in 1978 created a sacred structure that shouldn't be touched, that is perfection.

Well, let me just tell you that right now an industry and jobs and an economy of a State are dying, and you tell me that in 1978 the industry knew that these potential risks were there. The industry, if you listen to their testimony shortly after, says that they weren't aware that these risks were coming. Now in 1979 and 1980 this problem started getting worse.

You are telling us that, yes, we can go ahead and resolve this problem if we just apply the 1978 act and forget the moral responsibility that the Government might have for the use of these sites which are used for our nuclear power and our utilities, and that they have no responsibility. Get Kerr-McGee—well, no, I think Kerr-McGee is still operating. Get Homestake. Well, they are still operating. But you could give me eight or nine lists and I can answer to you it is too late, they've gone under. Meanwhile these tailings sites stay there.

So I want both of you to know that I didn't want to come in here accepting the view of some of my colleagues that maybe you are biased, maybe you want the industry to die, maybe you are so against nuclear power or whatever that you want to see it die. I don't want to believe that, but your testimony has done very little to convince me otherwise.

Let me just conclude by saying that I will press on to get this legislation passed. I am ready to work with interested groups.

Maybe the funding mechanism needs fine tuning. Maybe we need to look at it once again.

Your institution, the Environmental Policy Institute, your Southwest Research, you've been noted for being concerned for the environment and you have a strong record. I and the members of this committee want to clean up these tailings piles. That is the main objective.

With that, I hope you reconsider your position, and I hope that you look at ways in working with this committee and not just blanketly say that you created a sacred document in 1978, and therefore, we should stick by it.

I ask unanimous consent to enter a letter I received from the Navajo tribal chairman, who is supportive of this bill. He wants a little more emphasis on the reservation community's 260 or so. I will insert it in the record.

[EDITOR'S NOTE.—The Navajo Nation's letter of July 10, 1985, referred to above, follows:]

July 10, 1985

Honorable Bill Richardson  
325 Cannon House Office Building  
Washington, D.C. 20515

Dear Congressman Richardson:

On behalf of the Navajo Nation, I would like to submit our comments to H.R. 2236 "Uranium Mill Tailings Reclamation Act of 1985." I respectfully request that these comments be made a part of the record.

The Navajo Nation supports the intent of H.R. 2236 to clean up uranium mill tailing sites. Our comments reflect our belief that in any such clean-up all parties responsible should fairly share in the delays and costs necessary to facilitate such reclamation.

As mentioned before, the Navajo Nation is supportive of the bill's intent to clean up uranium mill tailing sites. We note, however, that the equally serious problem of uranium "mine" tailing sites are left unaddressed. On the Navajo reservation alone there are approximately 260+ mine tailing sites. Such sites pose significant health and safety hazards for the Navajo people and their livestock. The Navajo Nation strongly recommends that "mine" tailing sites be included in this legislation.

Our second concern is that the uranium industry is not fairly sharing in the reclamation cost. The profits the companies received in extracting uranium and thorium far exceed their fifteen (15) percent share of the reclamation cost that H.R. 2236 asks of them. The Navajo Nation recommends that the financial costs be redistributed to require the uranium industry to take more financial responsibility in the reclamation.

Our third concern is with regard to the language of Section 9(f) which appears to foreclose future financial liability on the part of the nuclear industry. This provision is ill-advised and should not become part of federal law or policy with respect to the industry. One of the known facts about uranium, thorium and other radioactive materials is that the adverse health consequences take decades to become evident. For example, it has been twenty or more years since the end to atmospheric testing of nuclear devices. Yet it is only in the last few years that the adverse health consequences of the testing have become apparent.

Bill Richardson

THIS SILENCE HAS POSED A NUMBER OF PROBLEMS. FIRST, IT HAS BEEN VIEWED AS UNFAIR NOT ONLY BY THE INDUSTRY BUT BY A NUMBER OF THE AFFECTED STATES. FOR ONE THING, IT SEEMS INCONSISTENT ON THE ONE HAND FOR THE FEDERAL GOVERNMENT TO PICK UP THE COST OF GOVERNMENT CONTRACT TAILINGS AT INACTIVE SITES BUT NOT TO DO SO AT ACTIVE SITES. MORE GENERALLY, TITLE II OF THE TAILINGS ACT HAS LED TO THE RETROSPECTIVE APPLICATION OF A VERY HEAVY LIABILITY ON THE COMPANIES OWNING ACTIVE SITES. THIS HAS BEEN VIEWED AS UNFAIR BECAUSE THROUGHOUT THE '50'S, '60'S, AND EARLY '70'S, THE ATOMIC ENERGY COMMISSION, THE PUBLIC HEALTH SERVICE, AND THE EPA AFFIRMED THAT URANIUM MILL TAILINGS POSED NO SIGNIFICANT RADIATION HEALTH HAZARD. THE AEC AND THE PUBLIC HEALTH SERVICE IN FACT ISSUED A REPORT IN 1969 ADVISING THAT NO REMEDIAL ACTION PROGRAM AIMED AT RADIOLOGICAL HAZARDS ASSOCIATED WITH TAILINGS PILES WAS REQUIRED. IF THE GOVERNMENT HAD ACKNOWLEDGED THAT THERE WAS A "POTENTIAL AND SIGNIFICANT" HAZARD, OR THAT EXTENSIVE MEASURES WOULD BE REQUIRED TO STABILIZE TAILINGS, THE GOVERNMENT THROUGH ITS PROCUREMENT CONTRACTS WOULD PRESUMABLY HAVE SHARED IN THOSE COSTS AS TO THE GOVERNMENT CONTRACT TAILINGS. IN ADDITION, PROVISIONS WOULD HAVE BEEN MADE IN CONTRACTS WITH NUCLEAR UTILITIES TO COVER THE EXTRA COSTS ASSOCIATED WITH THOSE CONTRACTS AS WELL.

SECOND, WE SIMPLY MUST RECOGNIZE THAT THE UNITED STATES URANIUM INDUSTRY -- AN INDUSTRY VITAL TO OUR NATIONAL SECURITY AND ENERGY INDEPENDENCE -- IS IN AN EXTREMELY DEPRESSED CONDITION. EMPLOYMENT HAS SHRUNK FROM 22,000 TO ONLY 2,000 NATIONWIDE. NEW MEXICO, WHICH HAD 7,000 TO 8,000 EMPLOYED IN THE INDUSTRY ONLY A FEW YEARS AGO, REPORTEDLY NOW HAS ONLY FOUR MEN STILL ACTUALLY MINING URANIUM ONE TODAY. THERE ARE A NUMBER OF REASONS FOR THIS, INCLUDING DOE ENRICHMENT POLICIES AND UNFAIR FOREIGN COMPETITION. I FULLY EXPECT THAT WE SHALL BE OFFERING A NUMBER OF ADMINISTRATIVE AND LEGISLATIVE INITIATIVES ON BOTH ENRICHMENT POLICIES AND THE DUMPING OF FOREIGN URANIUM IN THIS COUNTRY IN RESPONSE. BUT ONE OF THE FACTORS CONTRIBUTING TO THE PLIGHT OF THE INDUSTRY -- AND THE UNEMPLOYMENT OF ITS WORKERS -- IS THE VERY LARGE UNCERTAINTY FACED BY DOMESTIC PRODUCERS WITH RESPECT TO THE COSTS OF RECLAIMING EXISTING TAILINGS. IT IS IRONIC BUT TRUE THAT AT THE SAME TIME CANADA HAS PUMPED A BILLION DOLLARS IN GOVERNMENT CAPITAL INTO ITS INDUSTRY, WE HAVE HIT OURS WITH A BILLION DOLLARS OF LIABILITY. H.R. 2234 AND S. 1004 WILL HELP IN ADDRESSING THIS ISSUE AND THUS CONTRIBUTE TO ASSURING OUR ENERGY SECURITY. AND THIS IS A MATTER WHICH HAS PREVIOUSLY BEEN OF CONSIDERABLE VALUE TO OUR UTILITIES AND THEIR RATEPAYERS.

WHEN CONGRESS ADOPTED TITLE II OF THE MILL TAILINGS ACT, A NUMBER OF MEMBERS MADE CLEAR THAT WE INTENDED TO REVISIT THE QUESTION OF ALLOCATION OF RESPONSIBILITY FOR CLEAN-UP COSTS. THE GENERAL ACCOUNTING OFFICE HAS SIMILARLY RECOGNIZED THE NEED FOR SOME EQUITABLE SHARING, AT LEAST AS TO THE GOVERNMENT-RELATED TAILINGS. MY ONLY REGRET IS THAT IT HAS TAKEN SO LONG TO GET TO THIS ISSUE.

I UNDERSTAND THAT WE WILL HEAR SOME MAJOR CONCERNS ABOUT THE LEGISLATION UNDER CONSIDERATION TODAY -- THAT IS WHAT THIS HEARING IS ALL ABOUT -- I WANT ALL THE WITNESSES TO KNOW THAT I AM HERE TO LISTEN TO YOUR CONCERNS AND I WANT YOU TO KNOW THAT I AM WILLING TO WORK WITH YOU IN THE DAYS AHEAD. MY ULTIMATE GOAL AND CONCERN IS TO ENSURE THAT OUR ENVIRONMENT IS PROTECTED AND THAT THESE URANIUM MILL TAILINGS SITES ARE CLEANED UP. BEFORE TURNING TO OUR DISTINGUISHED WITNESSES, I WOULD LIKE MY COLLEAGUES TO MAKE ANY STATEMENTS WHICH THEY WISH TO ENTER INTO THE OFFICIAL HEARING RECORD.



Mr. RICHARDSON. I thank both of you for appearing before this committee.

I now will ask the last panel to come up and testify. I want to welcome the three of you. I apologize for the delay and I apologize for the shifting of order. You were to appear as panel No. 2. You have had a long wait. I know you have got a lot to say. Your statements will be included fully in the record. I am going to ask you to summarize. I am going to put on the 5-minute timer in hopes of us moving rapidly.

Mr. Conger, please proceed.

[Prepared statement of Harry M. Conger, with attachment, Frank E. McGinley and Sol Burstein may be found in the appendix.]

**PANEL CONSISTING OF HARRY CONGER, CHAIRMAN OF THE BOARD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, HOMESTAKE MINING CO. ON BEHALF OF THE URANIUM PRODUCERS OF AMERICA; FRANK E. MCGINLEY, CONSULTING METALLURGICAL ENGINEER; AND SOL BURSTEIN, VICE CHAIRMAN, WISCONSIN ELECTRIC POWER CO. ON BEHALF OF THE EDISON ELECTRIC INSTITUTE NUCLEAR POWER EXECUTIVE ADVISORY COMMITTEE**

Mr. CONGER. Thank you, Mr. Chairman.

My name is Harry Conger. I am chairman of Homestake Mining Co. Today I am representing and speaking for the Uranium Producers of America.

As an aside, being a uranium producer, it was a little bit refreshing to hear some of the agency testimony expressing their frustration in working with the other agencies. We certainly can empathize with some of those difficulties.

In response to the invitation to appear for this joint committee, which we were delighted to do, we prepared a summary of our remarks, which have been issued to you. In further response to your request for brevity I will just make a couple of points.

Everything is contained in the materials we have submitted to you, Mr. Chairman.

Mr. RICHARDSON. Your remarks will be inserted in their entirety.

Mr. CONGER. I believe the key of our issues is the one of retroactivity. The uranium industry was one which was fostered by the U.S. Government following World War II. In its interest in providing a secure and reliable and cost effective energy base for this country it encouraged private industry to get into the nuclear fuel cycle and nuclear power generation.

Our company and other companies followed this lead by the Government and did indeed establish a nuclear industry in this country.

Had we known in the early days what reclamation costs would have ensued many, many years later, as many as 20 years later, there is ample testimony to the effect that those responsible for the Atomic Energy Commission and their procurement of material would have recognized these additional costs. So that is an issue that I think the record is very clear on.

Further, had we known that these costs that came out of UMRCA in 1978 were going to be of the size and scope that they were we would have negotiated with the customers of our yellow cake to recover those costs, or simply not have entered into the contracts because they would not have been economic. I think the record is clear on that and can be established.

The second point is that there is precedent for what is in your bill. There is precedent, first of all, in the nuclear power industry itself that the Federal Government will collect a tax and require payment through a tax for spent fuel disposal.

Second, I think there is a parallel in the coal mining industry where strip mining reclamation in years past is being recovered now by present utility ratepayers through their utility bills to cover the costs of this reclamation for mining that happened years before.

Third, the Federal Government has recognized their responsibility in the inactive uranium sites by paying 90 percent of the reclamation for those sites.

So I think all of those things in a very brief description come right to the point.

I would just conclude by saying, Mr. Chairman and members of the committee, that this is no industry bailout.

Thank you.

Mr. RICHARDSON. Thank you very much, Mr. Conger, especially for keeping your remarks so succinct and brief.

Mr. RICHARDSON. Mr. McGinley.

Mr. MCGINLEY. My name is Frank McGinley. I am a former assistant manager of the AEC/DOE Grand Junction office and I am currently a consulting metallurgical engineer.

I appreciate the opportunity to appear before this joint congressional hearing. With your permission, Mr. Chairman, I will summarize by reading just one or two statements from my testimony.

There was not to my recollection any provision in the AEC contracts that specifically recognized the costs of mill dismantling, site decontamination or tailings stabilization. Indeed, prior to 1960 there was little concern about the need to stabilize tailings even from wind erosion. It was only after the AEC-owned mill at Monticello, UT, was shut down and tailings became subject to wind and water erosion that tailings pile grading and covering started to receive consideration.

The extensive measures currently envisioned for tailings reclamation, which are largely associated with radon suppression, were not conceived until well after the Government contract period.

Had the AEC recognized the potential radon hazard or that extensive measures would be required to decommission mills and stabilize tailings, the Commission, in my opinion and based on my knowledge of its practice, would have recognized for purposes of its procurement contracts and likely defrayed all reasonable costs associated with AEC-related tailings.

In regard to the two bills, both of which provide Federal Government assistance, although I have not run the numbers, it is my understanding that 30 percent is roughly the proportion of AEC related existing tailings piles at the active sites, and the percentage at any given site would, of course, vary. Some may have none; others



may have 50 percent. I can recall one site at least that tailings may constitute 100 percent of a particular pile.

Precisely how Congress provides the reimbursement seems to me a legislative matter. However, given the facts as I understand them, the 30-percent contribution is not an unreasonable approach for an industrywide bill. The only alternative, in my opinion, would be a site-by-site approach.

That summarizes what I have to say, Mr. Chairman. I would be glad to answer any questions.

Mr. RICHARDSON. Thank you very much.

Mr. Burstein.

Mr. BURSTEIN. Thank you, Mr. Chairman. I am Sol Burstein, and I am vice chairman of Wisconsin Electric Power Co. and a member and past chairman of the Edison Electric Institute Nuclear Power Executive Advisory Committee.

We are, of course, pleased to have the opportunity to appear before you today to discuss the proposed Uranium Mill Tailings Reclamation Act of 1985.

My full testimony has been submitted to the subcommittee, and as you indicated, we understand it will be entered into the record.

As you know, EEI's member companies have made large commitments to nuclear energy and therefore the EEI membership has a very large interest in the future of the domestic uranium supply industry.

My own company, Wisconsin Electric, has two nuclear units with nearly 1,000 megawatts electric capacity in operation, which in 1984 provided a third of our customers' needs. These units have been operating since 1970 and 1972, and naturally are expected to continue for at least 40 years. Wisconsin Electric requires about 450,000 pounds of uranium each year for just these two units.

My full statement contains a discussion of the history of domestic uranium supply as seen from the standpoint of the domestic electric utility industry, the consumer. It is important that our position on the legislation being considered here today be viewed in the light of that history.

The Edison Electric Institute is deeply concerned about the retroactive approach to provide funding for mill tailings stabilization as called for in the Uranium Mill Tailings Reclamation Act of 1985. Any concept of a supplier receiving supplemental payments over and above contracted arrangements after deliveries have been made and paid for would be inappropriate. Many uranium producers have delivered and are continuing to deliver uranium under long term take-or-pay arrangements at prices well above the current spot price. The domestic electric utilities believe that they and their consumers have already paid for the required environmental protection activities.

Also, our reading of the language indicates that the domestic uranium producers would be given the opportunity to walk away from their responsibility for mill tailings reclamation at a very lost cost to them. In effect, the proposed legislation could help lead to the demise of the domestic uranium industry. In this respect the proposed legislation seems inconsistent with Congress' interest in retaining and supporting a domestic uranium production industry.

NRC regulations that implement the Uranium Mill Tailings Radiation Control Act of 1978 require surety arrangements by uranium producers to assure that funds are available for eventual stabilization of the active mill tailings sites. These regulations have resulted in surety arrangements equivalent to nearly \$250 million. Such funds should be available in the event that producers are unable to take care of their tailings. Also, responsible ownership of the active sites lies mostly with some of the largest mineral and energy conglomerates in the world, who benefited from the sale of the uranium.

Special attention is needed to assure that the controlling regulations under the 1978 act are reasonable for the protection of the health and safety of the public. Uranium mill tailings are unique and with proper control are not a major hazard. However, a real potential exists for the establishment of regulations that impose excessive requirements for stabilization, and Congress should be concerned about such excesses.

Our debate earlier this morning about the range of costs of cleanup of these sites is a good indication of our concern.

The electric utility industry is willing to cooperate with Congress and with the domestic uranium producers in trying to resolve the problems facing a future domestic uranium production industry.

Uranium mining and milling costs, foreign competition, and perhaps unfair foreign trade practices are problems that must be faced in resolving the future of the domestic industry. However, that future is quite separate from the question of funding for the stabilization of mill tailings that were produced in the past. The funding for reclamation of existing mill tailings should not be resolved with a tax on electric customers.

We are pleased to have the opportunity to appear before you, Mr. Chairman, to present our views, and we are prepared to respond to any questions the committee may have.

Mr. RICHARDSON. Thank you very much, Mr. Burstein.

Let me first ask you a question in terms of Wisconsin Electric Power. Where do you get your uranium?

Mr. BURSTEIN. Presently most of our uranium is coming from domestic sources with a small portion coming from overseas suppliers.

Mr. RICHARDSON. What country?

Mr. BURSTEIN. Canada.

Mr. RICHARDSON. I am going to ask you a question not as a representative of the Wisconsin Electric Power Co. but as a representative testifying on behalf of Edison Electric.

When we started drafting this bill my staff and Senator Domenici's staff and some of our advisers consulted with the utility companies about an equitable arrangement. As I recall our original formula of 55-30-15, we changed it to suit some of the utilities who thought the earlier arrangement, which had a higher proportion of their share, was inadequate.

Are you telling me that no cost sharing is acceptable to you? Or are you telling me that you are ready to work with this committee for a more suitable cost sharing apportionment?

Mr. BURSTEIN. I would respond in this way, Mr. Chairman. Anything that increases the cost of electricity to our consumers

through rates which we have to seek approval through local regulatory and Federal rate setting commissions is something that we in philosophy are opposed to.

I have indicated to your committee staff, and we have in the past, that we would be willing to sit down and discuss the nature of the domestic uranium supply industry and its future needs.

Our position in respect to the mill tailings as they exist now is really quite simple. We think we paid for them once, and now you are asking us and our customers, who through their rates have already paid for the electricity coming from these sources, to pay for them again. I don't think that is quite fair.

We will certainly be glad to sit down and meet with your staff on any potential resolution of the problem of cleanups, but I think we are hitting the same people twice, at least in connection with these existing tailings sites.

Mr. RICHARDSON. I am going to ask the committee staff to search exactly when you say hit us again. I would like to see exactly what you mean by the utilities being hit on this 1978 act. I think it would be a subject of intensive interest.

Mr. BURSTEIN. We will be glad to meet with your staff to pursue that, sir.

Mr. RICHARDSON. I guess what bothers me is the lack of commitment that I sense the utilities have to our domestic uranium industry. You know I'm on this kick and I guess more than most, because I have the largest problem. I happen to think that our utilities should buy their uranium from our domestic sources. I would like to see 100-percent Buy America. I know that's not going to happen. But if I can chip away and pass amendments like we did on the foreign aid bill where the United States is prohibited from importing coal and uranium from South Africa to promote, I am going to continue such initiatives in the absence of the DOE and the State Department and the utilities not looking at our domestic sources first.

Tell me about the utilities' commitment to our domestic uranium sources. What if I succeed in barring every nation that imports uranium to stop doing it? Is this a constructive approach? Would you buy domestic? If we bar South Africa, would you go ahead and buy Australian instead of buying American? Tell me about your commitment to domestic uranium sources.

Mr. BURSTEIN. We have, first of all, Mr. Chairman, a commitment to provide electricity to our customers at the lowest rate consistent with all of our other obligations in terms of environmental responsibility, reliability of supply, integrity of the system. Obviously where it is possible for us to buy domestically we do so. Domestic uranium supply is certainly much more reliable and certain than offshore supplies. It certainly provides for economy and jobs within the United States rather than supporting those of other nations. It helps in the balance of payment situation, which I think we are all concerned with.

But at the present circumstance, in the short term, every time we buy domestic uranium at prices which the domestic uranium suppliers say they must receive in order to earn a return on their investment, we must raise rates, and on that basis we have no



choice but to secure our fuel at the sources that provide the lowest cost fuel for our customers and ensure the lowest rates available.

The cost of electricity goes into products that we manufacture and service, in our farm products as well as our machinery products, and these end up carrying the cost of the energy needed to produce them in the price that consumers have to pay. If we raise our energy costs we might become noncompetitive in many other areas, and certainly it is a factor that we all have to consider. But any time that we subsidize a sector of the American economy I think the American consumer pays an unnecessarily high price.

Mr. RICHARDSON. I am going to recognize Congressman Strang. But let me also welcome the chairman of the Mining Subcommittee of Interior, Congressman Rahall. We appreciate your being here and we will get to you shortly.

Congressman Strang.

Mr. STRANG. Mr. Burstein, I appreciate very much your coming. I have a couple of questions to ask you. I also am pleased to see Mr. Conger and Mr. McGinley.

Mr. Burstein, I need to get something clear in my mind. Are you speaking in this testimony as a representative of the Edison Electric Institute? That's the graven word?

Mr. BURSTEIN. Yes, sir.

Mr. STRANG. How could this bill have gotten this far without the drafters knowing where you stood?

Mr. BURSTEIN. I can't answer that. You would have to ask the drafters.

Mr. STRANG. I am astonished.

You raise some questions in your testimony that I think are very interesting. You talk about take-or-pay contracts. How big a factor are they now? In the Edison Electric Institute composite of uranium users, how big a factor are they in the market?

Mr. BURSTEIN. I think they are a substantial factor. I don't know the exact number and I do not have that data with me, but it is my understanding that the average price that investor owned utilities are paying for uranium is above \$30 even though the current spot market price is \$15. The reason for that is most of these utilities entered into long-term contracts in the mid to late 1970's on the basis that they would pay the price based on the base rates occurring at that time plus escalations tied to various indices.

Mr. STRANG. I am aware of what take-or-pay contracts are.

Mr. BURSTEIN. Only under certain very unusual circumstances have there been reliefs and buyouts of those situations.

Mr. STRANG. Have you had negotiations with the producers on this matter and on the matter of this bill?

Mr. BURSTEIN. Not on this bill. We have had negotiations with producers on long-term take-or-pay contracts.

Mr. STRANG. Do you think this is the first time Mr. Conger knew of the position of the Edison Electric Institute when it says the funding for reclamation of existing mill tailings should not be resolved with a tax on electricity customers who do not benefit from its generation? Funding for these activities should properly come from those who benefited from the original production. Do you think that is the first time he has known that?



Mr. BURSTEIN. Not if he has been listening to me over the last several years.

Mr. STRANG. Mr. Conger, what about this?

Mr. CONGER. I have not been listening to Mr. Burstein, so I don't know what EET's position was. This is the first time I have heard that.

Mr. STRANG. I guess, Mr. Chairman, I am so puzzled by this status that I have no other questions. Thank you.

Mr. RICHARDSON. I thank my colleague.

Congressman Rahall.

Mr. RAHALL. Thank you, Mr. Chairman. Let me commend you for your leadership in this area and for holding these hearings today on the pending legislation.

Gentlemen, I was not here during the actual presentation of your testimony, but I have looked through the written statements.

I note in particular, Mr. Conger, your testimony, which is very detailed and very important in regard to reclamation costs. However, I could not find in there the effects on mining industry employment of a Federal cleanup strategy versus an industry cleanup strategy as provided for under existing law. What are the effects of both of those on mining employment?

Mr. CONGER. By effects, do you mean contrast whether the DOE did it or the operators did that cleanup?

Mr. RAHALL. That's correct.

Mr. CONGER. I don't have any figures on that, Congressman Rahall. I guess my own judgment would be that since contractors can be utilized as part of the bill that is proposed and we, in our own industry, use contractors quite a bit, even when we have the opportunity to employ our own people to do things, the cost effectiveness should be comparable, I would think.

Mr. RAHALL. So there would be no difference in mining employment?

Mr. CONGER. No. Assuming it is most effective, that means that the employment levels would be lower probably than if it was ineffective. There would be a lot of waste, and certainly none of us want to see any waste.

Mr. RAHALL. Mr. McGinley, a number of people are concerned about the policy implications of the blanket Federal share provisions of these bills. Do you believe that Federal assistance would be more appropriately determined on a site-by-site basis?

Mr. MCGINLEY. At this point, Mr. Rahall, I haven't really had a chance to think about this 30-percent participation other than looking at it on an industrywide basis. But from that point of view, because the AEC-related tailings are roughly 30 percent of the total, I see nothing wrong with going with it on that basis. I can see that some of the individual operators in industry might have problems with that. For example, someone that had, say, more than 30-percent AEC related tailings or commingled tailings might want a higher percentage or something. As a start, I see nothing wrong with the 30 percent.

Mr. RAHALL. Thank you.

Thank you, Mr. Chairman.

Mr. RICHARDSON. Thank you.

Mr. Conger, you heard Mr. Burstein talk about the issue of how, if this bill is passed, it is going to adversely affect domestic uranium production. Maybe you should answer that and maybe you should also answer the contention by the environmental groups that you should be the sole payer of these tailings piles. How would this financially affect your industry? What are we talking about in terms of actual costs and actual results of those costs?

Mr. CONGER. The notion that by causing the industry to have to shoulder up squarely and totally to do this retroactive reclamation, the notion that that will somehow make the industry more viable and stick around makes you think of the notion that you want to get people in debt so that you will always have them in your grips.

It seems to me that it would work better the other way, that if the industry were viable, if this past problem were corrected on a more general basis, that the industry would then be able to respond to a market situation which I think most of us believe is going to occur, that is, in 10 or 15 years the demand for uranium is going to be such that there could be a domestic uranium industry again.

So I guess I am on the opposite side on that notion.

What was the second part of the question?

Mr. RICHARDSON. Can you afford the cleanup costs? Should you pay for the whole thing?

Mr. CONGER. The notion is to look at some of the participants in any situation and pick out ones that sort of make the case one way or the other, and obviously if you can pick an Exxon, you have got a great case for saying no insolvency potential there. I think a more proper approach to the thing would be to look at the industry, and if you took all of the participants in the industry and aggregated all that they earned in the way of profits, or even aggregated their balance sheets as apportioned to that part of their business, there is not the wherewithal to completely do this job, I don't believe.

Mr. RICHARDSON. Mr. McGinley, you obviously have a long history in this area. Why is the mining industry treated the way it is when it comes to some of these reclamation costs? We have had situations in our history where an industry provides goods and services that didn't take environmental management costs into account, and once those health and safety needs were identified, there were Federal and State standards imposed, companies held responsible.

Can you offer any explanation as to why the mining industry has been treated the way it has? In other words, you guys pick up the whole thing—you're responsible.

Mr. MCGINLEY. No, sir, I can't. Of course, one of the things you have to keep in mind is that the mining industry has always been in a very competitive field, whether it's uranium or copper or lead and zinc. We are competing with producers from other nations. Domestic producers in order to stay in business have to meet that competition and oftentimes, in recent years at least, they have been asked to meet environmental standards that certainly weren't conceived at the time a lot of operations began.

Speaking especially about the uranium mill tailings situation, I think the evolution here is a good example of how, in the early

days, there was very little concern about the radioactivity of uranium mill tailings. The tailings themselves were not considered any more hazardous than the tailings from other types of mining operations. Then gradually there was concern about the gamma radiation and then later on about the water pollution problems, and then ultimately about the radon emanation from the tailings. The radon emanation, of course, has been the real Achilles heel in this whole problem.

But I think it has been true of all the mining industry, whether it is uranium or anything else. There has been more and more concern about not only the workmen in the industry but the general public and the environment. I know the copper industry has gone through the same thing in Arizona. You can put your finger on quite a few examples in the mining industry where this has been a problem.

But I am not sure if I have answered your question.

Mr. RICHARDSON. You certainly have.

I have one more question to Mr. Conger and then finally to Mr. Burstein.

Do my colleagues have additional questions?

[No response.]

Mr. RICHARDSON. Lately we have heard about the cleanup costs going from \$500 million to \$1 billion, now \$4 billion. What is your estimate of these estimates by our Government agencies?

Mr. CONGER. I would guess, Mr. Chairman, that the actual cost, when it is finally determined, is probably bracketed now with these estimates. We would tend to believe estimates on the lower end of that scale. Certainly the \$4 billion estimate, if it does cost that, there is going to be a tremendous amount of waste.

Mr. RICHARDSON. Mr. Burstein, let me just conclude by offering an olive branch to you as a representative of the utilities. Once again we will be moving this legislation. We want to work with you. You have obviously, got some reservations. Don't come back to us as some of our previous witnesses have and tell us that this is the only way to deal with this problem. We want to work with you on it.

I, personally, want to work with you on domestic uranium industry issues and foreign uranium industries. I know that you have had a lot of contact with Australia and Getty Oil, et cetera. You have had a lot of situations where some have said that you have given a little preference to some of the foreign uranium, and you stated your reasons and I respect that. I don't want to continue getting into confrontations where we have a situation, where we have a strong ally like Australia and where we have strong allies like Canada, and we are forced to take, because of our own inadequate Government DOE policies on domestic uranium purchases—I won't call it protectionist legislation. I like to call it protective legislation of our own industry. Equity. I like to call it reciprocity.

If we can come up with a creative way to persuade you and other utilities, our utilities, that we do have some domestic sources, maybe we can work together to encourage you to buy more of their sources rather than coming up ever 2 minutes and taking care of other Nations when our own people are on their back and our own industry is trying to get back and they are trying to comply with

environmental standards. I think they are serious. I encourage you to work with us on this. Instead of having these confrontations I would like to cooperate.

Mr. BURSTEIN. We certainly will want to work with you and pledge ourselves to do so.

Mr. RICHARDSON. This hearing is adjourned.

[Whereupon at 1:45 p.m. the hearing was adjourned.]

## APPENDIX

TUESDAY, JULY 16, 1985

### ADDITIONAL MATERIAL SUBMITTED FOR THE HEARING RECORD

STATEMENT OF CONGRESSMAN BILL RICHARDSON  
URANIUM MILL TAILINGS RECLAMATION ACT -- H.R. 2234

THANK YOU MR. CHAIRMAN. I WANT TO EXPRESS MY SINCERE APPRECIATION TO YOU FOR HOLDING HEARINGS ON THIS IMPORTANT PIECE OF LEGISLATION. I ALSO WANT TO TAKE THIS OPPORTUNITY TO WELCOME OUR FRIENDS FROM THE SENATE, ESPECIALLY MY COLLEAGUES FROM NEW MEXICO, SENATORS DOMENICI AND BINGAMAN, SENATOR SIMPSON FROM WYOMING AND THE GOVERNOR FROM MY GREAT STATE OF NEW MEXICO TONEY ANAYA AND THE GOVERNOR FROM THE GREAT STATE OF WYOMING ED HERSHLER.

THE TWO COMPANION BILLS BEING DISCUSSED TODAY, H.R. 2234 AND S.1004, PROVIDE FOR THE CLEAN-UP OF URANIUM MILL TAILINGS AT CURRENTLY-LICENSED PROCESSING SITES. NEITHER BILL WOULD CHANGE EXISTING STANDARDS OR ALTER THE REGULATORY SCHEME. BOTH BILLS ARE INTENDED TO ENSURE THAT TAILINGS ARE CLEANED UP IN A TIMELY FASHION, THAT OUR ENVIRONMENT IS FULLY PROTECTED, AND THAT OUR LOCAL COMMUNITIES AFFECTED BY TAILINGS ARE ASSURED THAT THERE IS NO UNADDRESSED HEALTH HAZARD HOVERING IN PERPETUITY IN THEIR BACKYARD.

TODAY'S HEARING IS A RARITY IN THAT IT IS A JOINT HEARING BETWEEN THE ENERGY RESEARCH AND DEVELOPMENT SUBCOMMITTEE OF THE SENATE ENERGY COMMITTEE AND THE ENERGY AND ENVIRONMENT SUBCOMMITTEE OF HOUSE INTERIOR. I THINK THE FACT THAT WE ARE HOLDING A JOINT HEARING TODAY IS AN INDICATION OF THE IMPORTANCE OF THE LEGISLATION UNDER CONSIDERATION.

URANIUM MILL TAILINGS, A SANDY RESIDUE LEFT FROM THE PROCESSING OF URANIUM ORE, HAVE BEEN AN INTENSELY CONTROVERSIAL SUBJECT. ORIGINALLY VIEWED AS POSING NO SIGNIFICANT RADIOLOGICAL RISK, CONGRESS IN 1978 DETERMINED, IN THE PREAMBLE TO THE URANIUM MILL TAILINGS RADIATION CONTROL ACT, THAT SUCH TAILINGS MAY "POSE A POTENTIAL AND SIGNIFICANT RADIATION HEALTH" HAZARD.

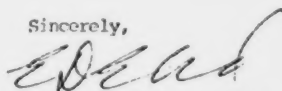
THE 1978 MILL TAILINGS ACT DIVIDED TAILINGS INTO TWO CATEGORIES: "INACTIVE SITES" AND "ACTIVE SITES." INACTIVE SITES, WHICH ARE COVERED BY TITLE I OF THE ACT, ARE THOSE SITES WHERE BOTH URANIUM OPERATIONS AND NRC LICENSES HAD BEEN TERMINATED PRIOR TO 1978. ALMOST ALL OF THE URANIUM AT THESE SITES HAD BEEN PRODUCED UNDER THE OLD ATOMIC ENERGY COMMISSION URANIUM PROCUREMENT CONTRACTS. TITLE I OF THE MILL TAILINGS ACT ACCORDINGLY PLACED 90% OF THE LIABILITY FOR REMEDIAL ACTION AT THESE SITES ON THE FEDERAL GOVERNMENT. THE REMAINING SHARE WAS ASSIGNED TO THE VARIOUS STATES.

ACTIVE SITES, WHICH TITLE II OF THE MILL TAILINGS ACT ADDRESSES, ARE THOSE SITES STILL UNDER COMMISSION LICENSE AS OF 1978. THESE SITES ARE LOCATED IN A NUMBER OF STATES, INCLUDING WASHINGTON, TEXAS, WYOMING, UTAH, COLORADO AND IN MY HOME STATE OF NEW MEXICO. THERE IS ALSO A THORIUM SITE IN THE STATE OF ILLINOIS. THE TAILINGS ACT PROVIDED FOR EPA STANDARDS AND NRC OR AGREEMENT STATE REGULATION OF THESE SITES. THE STATUTE WAS SILENT, HOWEVER, AS TO THE ALLOCATION OF FINANCIAL RESPONSIBILITY FOR THE COST OF CLEAN-UP.

in Utah and Nevada. Similarly, it took twenty or more years for Navajo uranium miners to manifest the signs of radiation-induced illnesses following the uranium mining on the reservation during the 1940's and 1950's. In light of these known facts, it makes no sense to relieve the industry of all future liability. It would make better sense to eliminate Section 9(f) and continue to hold those who have reaped profits liable for their activities. By taking this position we do not intend to imply that the industry should somehow be punished. Rather, we simply intend that responsibility and accountability are the duties owed by industry to the public. We believe that this position is amply supported by law and common sense.

We thank you for this opportunity to comment on H.R. 2236. Finally, we commend you for taking the initiative to try to resolve this serious problem.

Sincerely,



Eric D. Eberhard, Deputy Director  
Navajo Nation Washington Office

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## United States Senate

COMMITTEE ON  
 ENERGY AND NATURAL RESOURCES  
 WASHINGTON, DC 20510

### STATEMENT BY SENATOR JEFF BINGAMAN The Uranium Mill Tailings Reclamation Act of 1985 July 16, 1985

MR. BINGAMAN. Mr. Chairman, I want to thank the Chairman of both subcommittees for holding this important hearing. I was pleased to join my colleagues in the Senate in introducing the "Uranium Mill Tailings Reclamation Act of 1985." I believe this legislation addresses an important problem that has been of great concern to the residents of New Mexico and other states with active uranium mill tailing sites.

The problem we address in this legislation is providing the appropriate method and funding for the clean up of uranium mill tailings. These tailings or waste residues from the processing of uranium ore are a potential radiation hazard, and contamination may be spread to surrounding areas by wind and water erosion if the tailings are not disposed of properly.

The Uranium Mill Tailings Radiation Control Act of 1978 provided funding and authority to the U.S. Department of Energy (DOE) to dispose of radioactive tailings at inactive uranium mill sites. Remedial action at the two inactive sites in New Mexico will be carried out under this legislation. However, the responsibility for disposal of tailings at active mill sites remains with the owner or operator of the site.

Currently there are thirty-two active mill sites in the U.S. and five of these active or licensed uranium mill sites are in New Mexico. There are in excess of 80 million tons of mill tailings at these five sites. Approximately 30 million tons at three of the sites were generated under the Atomic Energy Commission (AEC) Uranium Program. The tailings generated under the AEC Program are commingled with tailings generated to produce uranium for nuclear generation of electricity.

Aside from the environmental and health problems from such tailings piles, there is the economic problem. The DOE has estimated an average cost for control to meet the federal standards for cleanup to be approximately \$3.75/ton of tailings. On this basis, costs for control of the five sites will range from about \$5 million for the smallest site to about \$115 million for the largest site. The estimated total cost for the five sites is approximately \$300 million.



The uranium industry in the United States is in a serious state of decline. In New Mexico alone, four of the five licensed uranium mills have been placed on stand-by status and may not reopen. The fifth mill is expected to operate only for one or two years. The deteriorating condition of the uranium industry indicates the importance of providing the necessary assistance to meet the costs of tailings disposal.

The legislation we discuss today would establish a program within the Department of Energy for the expeditious clean-up of existing uranium mill tailings to be financed by uranium producers (15 percent), nuclear utilities (55 percent), and the Federal Government (30 percent).

For new tailings produced after the enactment of this Act, the costs would be negotiated between the producers and the nuclear utilities. The program would operate under the regulatory scheme established in the Uranium Mill Tailings Act. The Secretary of Energy is directed to undertake the program and may designate the State in which the site is located or the owner of the site to perform the remedial action. The remedial activities would be paid for out of a fund established in the Treasury. The fund would be derived from annual payments from uranium producers, annual appropriations from the Federal Government and from a fee placed on nuclear generated electricity. The fee would be 0.15 mill per kilowatt hour or less than a nickel in a consumers monthly bill.

I strongly support the federal government and other users of uranium sharing the responsibility for disposal of these radioactive wastes. The Federal Government was the sole purchaser of uranium for many years. Over 30 percent of existing tailings nationwide are a result of the government's purchases for its defense programs. For these reasons, the GAO in 1979 recommended that the government share in these clean-up costs. This legislation would ensure that the government meets its legitimate responsibility. The nuclear utilities were required by the Nuclear Waste Policy Act to pay 1 mill per kilowatt hour for the clean up of high level wastes. This legislation levies only a 0.15 mill per kilowatt hour charge. Of course, the uranium producers must also share in any clean-up cost.

It makes good sense to have the federal government work with the industry and the nuclear utilities in financing the proper disposal of uranium mill tailings.

I will do everything I can to ensure swift passage of this much needed legislation.



TONEY ANAYA  
GOVERNOR

# STATE OF NEW MEXICO

OFFICE OF THE GOVERNOR

SANTA FE

87503

## TESTIMONY OF TONEY ANAYA

GOVERNOR OF NEW MEXICO

BEFORE THE

U.S. HOUSE COMMITTEE ON INTERIOR & INSULAR AFFAIRS

SUBCOMMITTEE ON ENERGY AND ENVIRONMENT

AND THE

U.S. SENATE COMMITTEE ON ENERGY & NATURAL RESOURCES

SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT

CONCERNING

URANIUM MILL TAILINGS RECLAMATION LEGISLATION

(H.R. 2236 AND S. 1004)

JULY 16, 1985

MR. CHAIRMEN AND MEMBERS OF THE COMMITTEES: I AM TONEY ANAYA, GOVERNOR OF NEW MEXICO. THANK YOU FOR THIS OPPORTUNITY TO DISCUSS A PROBLEM OF GREAT CONCERN TO THE STATE OF NEW MEXICO -- URANIUM MILL TAILINGS.

URANIUM MILL TAILINGS ARE EASILY OVERLOOKED IN DISCUSSIONS OF NATIONAL ENERGY POLICY. NUCLEAR POWER PLANT SAFETY HAS BEEN, AND WILL CONTINUE TO BE, THE FOCUS OF PUBLIC CONCERN AND CONGRESSIONAL ACTION IN SUCH LEGISLATION AS THE PRICE-ANDERSON ACT AUTHORIZATION.

NUCLEAR WASTE DISPOSAL, FROM THE SITING OF A COMMERCIAL REPOSITORY TO THE MANAGEMENT OF LOW-LEVEL WASTE AMONG STATES HAS AND WILL CONTINUE TO COMMAND ENORMOUS ATTENTION AROUND THE COUNTRY AND HERE IN WASHINGTON.

HOWEVER, MILL TAILINGS, IN CONTRAST, TOUCH VERY FEW STATES AND, THUS, DRAW LITTLE ATTENTION BY COMPARISON. AND, THE FACT THAT CONTINUED PRODUCTION OF URANIUM HAS ALL BUT COLLAPSED MAY TEND TO GIVE A FALSE SENSE OF SECURITY THAT WE DON'T HAVE A PROBLEM OF GREAT URGENCY.

REGULATIONS HAVE FAILED TO ADDRESS THIS GRAVE PROBLEM AND I AM CONVINCED THAT ONLY CONGRESSIONAL PASSAGE OF MANDATORY CLEANUP LEGISLATION WILL FINALLY DEAL WITH THE ENVIRONMENTAL EFFECTS OF ABANDONED MILL TAILINGS. WITH THE PROPOSED LEGISLATION YOU ARE NOW CONSIDERING, CONGRESS IS AGAIN FOCUSING ON THIS NEGLECTED PROBLEM AND

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ASKING HOW, IN EQUITY AND FAIRNESS, THE CLEAN UP OF THE REMAINING TAILINGS SHOULD BE CARRIED OUT.

LET ME DESCRIBE THE PROBLEM AS I SEE IT IN MY STATE. IN THE PAST, NEW MEXICO WAS THE MAJOR DOMESTIC PRODUCER OF URANIUM FOR BOTH DEFENSE AND NUCLEAR POWER PRODUCTION, PRODUCING ALMOST HALF OF ALL DOMESTIC URANIUM. AS YOU KNOW, HOWEVER, THE U.S. URANIUM INDUSTRY IS IN A SERIOUS STATE OF DECLINE. IN NEW MEXICO, EMPLOYMENT IN THE INDUSTRY HAS GONE DOWN FROM 6,800 WORKERS AT 38 MINES AND 5 MILLS IN 1980 TO ONLY ABOUT 280 WORKERS BETWEEN ONE TEST MINE AND ONE MILL TODAY. FURTHERMORE, THAT ONE MILL, WHICH IS CURRENTLY PROCESSING STOCKPILED ORE, WILL GO INTO STAND-BY STATUS EARLY NEXT MONTH WITH FURTHER LAYOFFS. THUS, THE MINES HAVE SHUT DOWN; THE MILLS ARE NOT OPERATING; THE URANIUM WORKERS HAVE BEEN LAID OFF CONTRIBUTING TO OUR VERY SERIOUS UNEMPLOYMENT PROBLEM; BUT, THE MILL TAILINGS, HOWEVER, REMAIN WITH US.

IN FACT, NEW MEXICO HAS ABOUT 45% OF ALL TAILINGS THAT WOULD BE COVERED BY THE PROPOSED LEGISLATION YOU ARE CONSIDERING TODAY.

REMEDIAL ACTION AT TWO INACTIVE MILL SITES IN NEW MEXICO WILL BE CARRIED OUT UNDER THE URANIUM MILL TAILINGS RADIATION CONTROL ACT (UMTRCA). FIVE ACTIVE OR LICENSED MILL SITES, CONTAINING IN EXCESS OF 85 MILLION TONS OF MILL TAILINGS, ARE LOCATED IN NEW MEXICO. THESE ACTIVE SITES ARE NOT INCLUDED IN THE UMTRCA REMEDIAL ACTION PROGRAM. APPROXIMATELY 30 MILLION TONS OF TAILINGS AT THREE OF THESE SITES WERE GENERATED UNDER THE ATOMIC ENERGY COMMISSION (AEC) URANIUM PROGRAM FOR MILITARY NEEDS. TAILINGS GENERATED UNDER THE AEC PROGRAM ARE CURRENTLY COMMINGLED WITH TAILINGS GENERATED TO PRODUCE URANIUM FOR NUCLEAR GENERATION OF ELECTRICITY.

THERE ARE BOTH ENVIRONMENTAL AND ECONOMIC PROBLEMS ASSOCIATED WITH THESE TAILINGS SITES. GROUNDWATER CONTAMINATION PROBLEMS HAVE BEEN DOCUMENTED AT EACH OF THE SITES. CONTAMINATION OF SURFACE AREAS SURROUNDING THE SITES CONTINUES TO SPREAD THROUGH WIND EROSION. THE CLOSING DOWN OF THE URANIUM MILLS LEAVES ENVIRONMENTAL PROBLEMS WITHOUT PROVIDING CONTINUED FINANCIAL RESOURCES TO PAY FOR CLEAN-UP OF THE TAILINGS SITES.

SOON AFTER I BECAME GOVERNOR, I REQUESTED A REVIEW OF THE STATE'S RADIATION PROTECTION REGULATIONS BY A GROUP OF EXPERTS IN THIS AREA. THE RECOMMENDATIONS OF THIS GROUP WERE FINALIZED THIS PAST FEBRUARY. THIS GROUP FOUND THAT THE STATE'S REGULATIONS AND FINANCIAL SURETIES FOR TAILINGS CLEANUP NEED TO BE STRENGTHENED CONSIDERABLY. A DETAILED TIMETABLE FOR REVISION OF THE STATE'S REGULATIONS HAS BEEN ESTABLISHED. SINCE THE STATE'S REGULATIONS MUST BE COMPATIBLE WITH THE NRC REGULATIONS, IT IS IMPERATIVE THAT THE NRC REQUIREMENTS BE FINALIZED BEFORE THE STATE CAN DEVELOP FINAL REGULATIONS FOR HEARING.

OTHER RECENT ACTIONS BY THE STATE INCLUDE STRENGTHENED TECHNICAL ABILITIES, INTERVENTION IN A RECENT LAWSUIT (EAGLE-PICHER INDUSTRIES, INC., ET AL. V. U.S., D.C. CIRCUIT, NO. 83-2259 (APRIL 16, 1985)) RELATED TO SUPERFUND ACTIONS AT URANIUM MILLING SITES, AND REQUEST TO THE EPA TO DESIGNATE TWO NEW MEXICO MILL SITES AS SUPERFUND SITES BECAUSE OF GROUNDWATER POLLUTION PROBLEMS.

COSTS TO ACHIEVE CLEAN-UP TO THE FEDERAL STANDARDS HAVE BEEN ESTIMATED BY DOE AT ABOUT \$3.75 PER TON, YET COSTS HAVE RECENTLY BEEN PROJECTED TO BE ABOUT \$8 PER TON AT ONE OF THE UMTRA INACTIVE SITES IN NEW MEXICO. BASED ON THESE ESTIMATES, TOTAL COSTS FOR CLEANUP OF THE FIVE ACTIVE SITES IN NEW MEXICO COULD RANGE FROM \$500 MILLION TO AS MUCH AS \$640 MILLION. COSTS FOR INDIVIDUAL SITES COULD RANGE FROM AS MUCH AS \$115 MILLION TO \$240 MILLION. CLEARLY, COSTS OF THIS MAGNITUDE FOR TAILINGS CLEAN-UP WERE NEVER CONSIDERED IN THE PRICING OF URANIUM. IN FACT, TAILINGS CLEAN-UP WAS NOT CONSIDERED AT ALL DURING PRODUCTION OF MUCH OF THE URANIUM MILL TAILINGS, PARTICULARLY DURING THE AEC PROGRAM AND EARLY PRODUCTION FOR NUCLEAR POWER.

THE PRESENT AND PROJECTED FINANCIAL CONDITION OF THE URANIUM INDUSTRY INDICATES ITS NEED FOR ASSISTANCE IN MEETING THE COSTS OF TAILINGS CLEAN-UP. I AM CONCERNED THAT WITHOUT ASSISTANCE, SOME OPERATORS MAY CHOOSE TO AVOID THE HIGH COSTS OF CLEAN-UP THROUGH BANKRUPTCY. THERE IS LITTLE REASON NOW TO BELIEVE STATE ENVIRONMENTAL INTERESTS WILL BE FAVORED IN BANKRUPTCY COURT DECISIONS.

THE FINANCIAL RESPONSIBILITY PROVISIONS IDENTIFIED IN THE LEGISLATION ARE APPROPRIATE. IN NEW MEXICO, ABOUT 35% OF THE TAILINGS AT ACTIVE SITES WERE GENERATED UNDER THE AEC URANIUM PROGRAM. THREE OF THE FIVE SITES WERE ESTABLISHED AND LICENSED BY THE AEC BEFORE TAILINGS WERE RECOGNIZED TO BE A PROBLEM. I BELIEVE THAT THE FEDERAL GOVERNMENT BEARS A RESPONSIBILITY TO ASSIST IN CLEAN-UP AT THESE SITES. I ALSO BELIEVE THAT THE NATION'S UTILITY INDUSTRY, WHICH BENEFITED FROM THE PRODUCTION OF URANIUM, SHOULD SHARE IN THE COSTS OF TAILINGS CLEAN-UP. WHILE NONE OF US LIKES TO SEE FURTHER INCREASES IN ELECTRICAL RATES, THE COSTS OF SUPPORTING TAILINGS CLEAN-UP WOULD BE MINIMAL FOR THE INDIVIDUAL RATEPAYER.

IN MY MIND THE REGULATORY PROBLEMS PRESENTED BY URANIUM MILL TAILINGS MIGHT BE VIEWED AS A PARADIGM OF UNSUCCESSFUL ENVIRONMENTAL REGULATION. FEDERAL AGENCIES HAVE THE EXPERTISE AND THE RESOURCES TO TACKLE THESE COMPLICATED REGULATORY SUBJECTS: STATE GOVERNMENTS ARE SUBJECT TO THE "POLLUTION HAVEN" COMPETITION THAT CAN LEAVE A STATE RELUCTANT TO IMPOSE STRICT ENVIRONMENTAL CONTROLS FOR FEAR OF LOSING SEVERELY NEEDED BUSINESSES. RATHER THAN A SMOOTH NATIONAL PROGRAM, REGULATORY DECISIONS HAVE BEEN BOUNCED BETWEEN FEDERAL AGENCIES, CONGRESS AND THE COURTS. EVEN NOW, NRC HAS YET TO PROMULGATE ITS FINAL STANDARDS FOR STABILIZATION IN 10 CFR PART 40, APPENDIX A.

BLAME IS AMPLE ENOUGH TO SHARE FOR THIS SITUATION.

I WANT TO MAKE SURE THAT NEW MEXICO'S POSITION WITH REGARD TO CLEAN-UP OF THESE TAILINGS IS TOTALLY CLEAR ON ONE POINT. WEAKENING ENVIRONMENTAL STANDARDS IS NOT THE ANSWER TO OUR PROBLEM, AND NEW MEXICO STATE GOVERNMENT'S SUPPORT OF THIS LEGISLATION IS PREMISED ON THAT PROPOSITION.

THE ENVIRONMENTAL COSTS IMPOSED BY MILL TAILINGS ARE BEYOND QUESTIONING AT THIS DATE: THE ONLY QUESTION IS WHO WILL BEAR THE COSTS -- THE NEIGHBORING CITIZENS, THEIR WATER SUPPLIES AND FUTURE GENERATIONS, THE URANIUM COMPANIES, THOSE WHO BENEFIT FROM NUCLEAR POWER? THERE ARE NO EASY ANSWERS TO THAT QUESTION, BUT I REITERATE MY

POSITION: THE TAILINGS MUST BE STABILIZED IN AN ENVIRONMENTALLY SAFE FASHION-THE COST OF POOR ENVIRONMENTAL PRACTICES SHOULD NOT FALL ON THOSE WHO LIVE NEAR THE SITES. FOR THESE REASONS, THE STATE OF NEW MEXICO STRONGLY SUPPORTS LEGISLATION SUCH AS S. 1004 AND H.R. 2236 TO ESTABLISH A MECHANISM AND FUNDING FOR PROPER URANIUM MILL TAILINGS CLEAN-UP.

WE DO, HOWEVER, HAVE SEVERAL SPECIFIC CONCERNS WITH THE BILLS AS PRESENTLY DRAFTED. OUR TWO MAJOR CONCERNS RELATE TO (A) THE APPLICABLE STANDARDS AND OVERSIGHT FOR REMEDIAL ACTION, AND (B) THE LIMITATION ON FINANCIAL OBLIGATION OF ACTIVE SITE OWNERS AND UTILITIES.

THE STATE OF NEW MEXICO BELIEVES THE LEGISLATION SHOULD CLEARLY SPECIFY THAT ALL REMEDIAL ACTION AT ACTIVE TAILINGS SITES MUST AT A MINIMUM COMPLY WITH THE EPA AND NRC STANDARDS. FOR THIS REASON, WE PREFER THE APPROACH OF H.R. 2236 WITH RESPECT TO THE APPLICABLE STANDARDS (IN SECTIONS 3, 4 AND 5). WE BELIEVE THAT THE EPA STANDARDS, AND THE IMPLEMENTING REGULATIONS PROPOSED BY THE NRC, FOR REPLACEMENT OF 10 CFR PART 40, APPENDIX A REPRESENT A REASONABLE AND PRUDENT APPROACH TO TAILINGS CLEANUP. THOSE STANDARDS ALSO REPRESENT A REASONABLE COMPROMISE BETWEEN THE RESTRICTIVE STANDARDS ORIGINALLY ADOPTED BY THE NRC (AND SUSPENDED BY THE CONGRESS), AND THE VERY LAX STANDARDS SOUGHT BY THE URANIUM INDUSTRY. THE PROPOSED NRC IMPLEMENTING REGULATIONS ALSO CONTAIN THE FLEXIBILITY REQUIRED TO ADDRESS PROBLEMS AT EXISTING SITES, AS THEY ALLOW FOR APPROVAL OF SITE SPECIFIC ALTERNATIVES TO THE STATED REQUIREMENTS. THESE REGULATIONS HAVE ALREADY UNDERGONE AN EXTENSIVE PUBLIC REVIEW AND COMMENT PROCESS.

IN THE OPINION OF THE NEW MEXICO STATE REGULATORY AGENCY AND THE ADVISORY BOARD THAT I CONVENED, THE EXISTING NEW MEXICO REGULATIONS FOR TAILINGS STABILIZATION AND OTHER REMEDIAL ACTION DO NOT PROVIDE ADEQUATE PROTECTION OF PUBLIC HEALTH AND THE ENVIRONMENT. THE UMTRCA REQUIRES THAT STATE REGULATIONS BE COMPATIBLE WITH THOSE PROMULGATED BY THE EPA AND NRC. REGULATIONS COMPATIBLE WITH THE FEDERAL REGULATIONS MUST BE ADOPTED BY THE STATE OR ELSE REGULATION OF URANIUM MILLS AND TAILINGS SITES WILL BE RETURNED TO THE FEDERAL GOVERNMENT. CLEAR LANGUAGE REQUIRING COMPLIANCE WITH THE FEDERAL STANDARDS WITHIN THIS LEGISLATION WOULD SHORTCUT THE REGULATORY MANEUVERS AND LITIGATION THAT HAVE SLOWED ENVIRONMENTAL REGULATION OF TAILINGS DISPOSAL TO A STANDSTILL.

A MECHANISM FOR OVERSIGHT AND LICENSING OF REMEDIAL ACTIVITIES BY THE NRC, SUCH AS THAT PRESENTLY PROVIDED FOR THE UMTRCA INACTIVE SITES, IS NEEDED. THESE PROCEDURES SHOULD INCLUDE MEASURES FOR PUBLIC PARTICIPATION IN SELECTION OF THE REMEDIAL ACTION ALTERNATIVE TO BE IMPLEMENTED.

WE BELIEVE THE BILLS' LANGUAGE PROVIDING FOR LIMITATION ON LIABILITY (PARAGRAPH F OF SECTION 9 IN BOTH H.R. 2236 AND S. 1004) IS SO BROAD THAT IT WOULD LITERALLY EXCUSE A LICENSEE FROM ANY RESPONSIBILITY FOR REMEDIAL ACTION RELATED TO TAILINGS DISPOSAL, AND MAY BE INTERPRETED AS PREVENTING ANY FUTURE REVISIONS TO THE FEDERAL REGULATIONS FOR URANIUM MILL TAILINGS DISPOSAL. WE ARE PARTICULARLY CONCERNED THAT LICENSEES BE RESPONSIBLE FOR REMEDIAL ACTION AND CLEANUP OF SPILLS OR OTHER CONTAMINATION THAT MAY OCCUR DURING THE ACTIVE OPERATION OF THE

SITE. AN EXAMPLE OF SUCH A SITUATION WOULD BE THE TAILINGS SPILL INTO THE RIO PUECO OF NEW MEXICO THAT OCCURRED FROM THE UNITED NUCLEAR CORPORATION URANIUM MILL IN 1979. WE SUGGEST THAT THE TERM "OTHER REMEDIAL ACTION" BE DEFINED TO LIMIT THE TERM TO POST-OPERATION ACTIONS ASSOCIATED WITH FINAL RECLAMATION, OR THOSE MEASURES THAT RELATE TO ACHIEVING FINAL RECLAMATION OBJECTIVES AT THE SITE. THIS WOULD ALSO CLARIFY THAT REMEDIAL ACTIONS UNDERTAKEN DURING THE ACTIVE OPERATION OF THE SITE WOULD NOT BE SUBJECT TO REIMBURSEMENT OF COSTS UNDER SECTION 5 OF THE BILL, UNLESS RELATED TO ACHIEVING FINAL RECLAMATION OBJECTIVES AT THE SITE.

THERE ARE SEVERAL OTHER AREAS IN WHICH CLARIFICATION OF THE LEGISLATION APPEARS DESIRABLE. MY STAFF WILL FORWARD SPECIFIC RECOMMENDED LANGUAGE TO ADDRESS THESE AREAS, AND WILL BE AVAILABLE TO WORK WITH YOUR STAFF ON THESE ISSUES.

I WOULD LIKE TO CLOSE BY THANKING MEMBERS OF CONGRESS FOR THEIR INTEREST IN THIS SUBJECT. NEW MEXICO IS PLAGUED BY THE TWIN PROBLEMS OF ENVIRONMENTAL POLLUTION FROM URANIUM MILL TAILINGS AND HIGH UNEMPLOYMENT FROM CLOSED URANIUM OPERATIONS. WE, FRANKLY, NEED ASSISTANCE IN SOLVING THESE PROBLEMS AND I APPRECIATE YOUR EFFORTS.

I WILL BE PLEASED TO ANSWER ANY QUESTIONS.

ATTACHMENT A:

ATTACHMENT TO GOVERNOR ANAYA'S TESTIMONY  
REGARDING  
URANIUM MILL TAILINGS RECLAMATION LEGISLATION

The State of New Mexico supports the proposed legislation embodied in H. R. 2236 and in S. 1004, but certain changes should be made in the bills as originally introduced, to ensure that the beneficial purposes of the legislation are realized. What follows is a list of concrete proposals by the State of New Mexico for changes in the language of H.R. 2236 (which is in large part identical to S. 1004):

(1) Revision of House Bill's Provisions as to Clean-up Standards:

(See Sec. 3, pp. 3-4 of H.R. 2236.)

REVISE SECTION 3(b) TO READ AS FOLLOWS:

"(b) APPLICABLE STANDARDS FOR REMEDIAL ACTION.--Reclamation, decommissioning, other remedial action, and long-term maintenance and monitoring performed by the Secretary or the designee of the Secretary under this section shall--

(1) comply with the generally applicable standards pertaining to such reclamation, decommissioning, other remedial action, or long-term maintenance and monitoring which were promulgated by the Administrator of the Environmental Protection Agency



and published in 48 Federal Register 45926 on October 7, 1983; and

(2) comply with the conforming NRC requirements to EPA standards which shall be promulgated as a final rule by the Nuclear Regulatory Commission no later than December 31, 1986, as amendments to 10 CFR 40 and 150, and in default by the Commission timely to promulgate such conforming requirements, the EPA standards shall be controlling; provided, that in the case of any conflict between the generally applicable EPA standards and the conforming NRC requirements, the NRC requirements shall control; provided further, that site-specific alternatives to the EPA standards and to the NRC requirements may be employed if such alternatives are reviewed and approved by the Nuclear Regulatory Commission, with the concurrence of the Agreement State as to any site located in an Agreement State; and

(3) comply with any pertinent license conditions or requirements which have been imposed by the Nuclear Regulatory Commission or by an Agreement State with respect to a particular site; and

(4) be undertaken in consultation with any Agreement State in which such active site is located, and in the case of Indian lands, with the appropriate Indian tribe and with the Secretary of the Interior."

(2) Revision of House Bill's Provisions as to Reimbursement of Costs for "Other Remedial Action". (See Sec. 5, pp. 5-7 of H.R. 2236.)

ADD TO SECTION 5(b) A THIRD, ADDITIONAL PARAGRAPH AS FOLLOWS:

"(3) It being the intent of Congress fairly to reimburse licensees or owners for costs reasonably attributable to post-operational reclamation, but not for operational costs, in the case of a claim for reimbursement of costs incurred by an owner or licensee during active operation of a site, the licensee or owner shall have the burden of demonstrating to the Secretary that the claimed costs cover only measures reasonably necessary to achieve final reclamation objectives at the site, and to the extent that such burden is not carried by the licensee or owner that portion of such claim shall be denied by the Secretary."

(3) Revision of House Bill's Provisions as to Limitations on Liability.

(See Sec. 9, p. 17 of H.R. 2236)

ADD AT THE END OF PARAGRAPH (f), THE FOLLOWING PROVISION:

". . . associated with active sites; provided, that nothing in this section or in this Act shall be construed to prevent

either the Nuclear Regulatory Commission or an Agreement State from enforcing existing regulations or license requirements, or from enforcing such regulations or license requirements as may be promulgated by such federal or state agency after the effective date of this Act, relative to such active sites."

(4) Revision of House Bill's Provisions as to Permanent Cessation of Operations Triggering Reclamation Obligations.

(See Sec. 3(c), p. 4 of H.R. 2236.)

REVISE THE FIRST SENTENCE OF PARAGRAPH (c) TO READ AS FOLLOWS:

Unless the Commission determines that a permanent cessation of operations leading to the production of byproduct material has occurred at any active site or that operations may not be legally resumed at that site, the Secretary . . ."

ADD AT THE END OF PARAGRAPH (c), THE FOLLOWING SENTENCE:

" . . . For purposes of determining when a "permanent cessation of operations" has occurred, the passage of three years without significantly adding materials (liquid or solid) to the tailings facility or without significantly operating the mill shall be prima facie evidence of "permanent cessation of operations," and the owner shall have the burden of showing why reclamation and/or decommissioning activities should not commence immediately after such three-year period of inactivity."

(5) Revision of House Bill's Provisions as to Contracting and Reimbursement of Costs, to include States.

(See SEC. 3(d), p. 4, and SEC. 5(b)(1), p. 6 of H.R. 2236.)

REVISE SECTION 3(d) TO READ AS FOLLOWS:

"(d) CONTRACTS WITH OWNERS, LICENSEES OR STATES.--The Secretary may enter into a contract with the owner or licensee of an active site, or with the State in which that site is located, for any reclamation . . . ."

REVISE SECTION 5(b)(1) TO READ AS FOLLOWS:

"(1) Any reimbursement provided under subsection (a) shall be made--

(A) only to the licensee or to a property owner of record at the time such remedial action was undertaken, or to the State in which the site is located; and

(B) only with respect to costs incurred by such licensee, property owner, or State."

(6) Revision of House Bill's Provisions as to Responsibility for Reclamation of Costs of Site Owners.

(See SEC. 9(a), pp. 11-12 of H.R. 2236)

ADD AT THE END OF PARAGRAPH (a) THE FOLLOWING SENTENCE:

" . . . Although site reclamation costs include costs of decontaminating or otherwise restoring vicinity properties, it is not the intent of this Act to require vicinity property owners to share in the over-all site reclamation costs. Consequently, although the owner or owners of the licensed site property itself shall be responsible for the over-all costs of reclamation of the site, including vicinity properties, no vicinity property owner shall be responsible for costs other than those attributable to the decontamination or restoration of that owner's vicinity property."

STATEMENT OF SENATOR HOWARD M. METZENBAUM  
SUBMITTED FOR THE RECORD  
SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES  
SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT  
AND  
HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT  
JULY 16, 1985

I am very troubled by the legislation under consideration today.

In 1978, Congress provided the framework for the cleanup of uranium mills and waste sites.

The government agreed to bear the costs of cleaning up the abandoned and inactive sites.

In return, the industry was clearly responsible for the cleanup of active and new sites.

The operators of existing sites are required to have reclamation plans and surety bonds, or insurance, for site cleanup.

But now they want to renege on their responsibilities.

They come before us and say, "Give us another break. Relieve us of all cleanup and long-term responsibility for active and future sites. Make the taxpayers and consumers pay 85% of the cost of cleaning up the existing waste at active sites. In return, we will pay 15% of the current costs, and all cleanup costs of waste generated in the future."

The industry made a promise in 1978 in order to get one good deal. Now it wants to renege on that and make a new set of promises in exchange for an even better deal.

Well, there is an old saying, "Fool me once, shame on you. Fool me twice, shame on me."

We are told that industry efforts at site cleanup have been hamstrung by regulatory gridlock, and this bill is needed for environmental reasons.

That sounds like a very self-serving argument to me.

If there is a problem in developing a responsible and workable set of regulations, then let's focus on standards.

I don't see how a billion dollar bailout for the industry, which transfers its financial and social responsibilities to the taxpayers and ratepayers, achieves this.

I am not prepared to sit by and allow the enactment of such costly and unwarranted legislation when we face deficits in excess of \$200 billion, and programs crucial to our senior citizens, poor children and the handicapped are cut back or eliminated.

It is going to take a great deal to convince me that this bill is in the best interests of the country.



STATEMENT OF  
JAMES W. VAUGHAN, JR.  
ACTING ASSISTANT SECRETARY FOR NUCLEAR ENERGY  
BEFORE THE  
COMMITTEE ON ENERGY AND NATURAL RESOURCES  
SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT  
U. S. SENATE  
AND THE  
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT  
U. S. HOUSE OF REPRESENTATIVES

JULY 16, 1985

Mr. Chairman, I am pleased to be here today to present the Department of Energy's comments on S. 1004 and H.R. 2236, two proposals currently under consideration that would finance reclamation and other remedial actions at active uranium and thorium processing sites.

BACKGROUND

Concerns over uncontrolled disposition of uranium mill tailings, with the potential for public health and safety impacts, led to the passage of Public Law 95-604, "The Uranium Mill Tailings Radiation Control Act of 1978." Title I of the Act directed the Department of Energy (DOE) to carry out appropriate remedial actions for certain inactive, largely abandoned uranium processing sites. Title II assigned responsibility for the decommissioning and stabilization of the licensed sites to the site owners under license with either the Nuclear Regulatory Commission (NRC) or the applicable agreement State. The legislation also authorized the Environmental Protection Agency (EPA) to establish standards for the cleanup of the processing sites and the final disposal of the mill tailings.

## STATUS OF TITLE I PROGRAM

The Department began its Title I work immediately following enactment of Public Law 95-604 in November 1978.

During FY 1979, information was gathered on the 22 processing sites identified in the Act for remedial action, plus some additional sites the Department had identified for possible remediation. In November 1979, 25 sites were officially designated by the Secretary for remedial action under the Act. One site, near Baggs, Wyoming, was later dropped because it was determined to be on public lands administered by the Bureau of Land Management and therefore ineligible, reducing the total number of processing sites to 24. Authorization for the cleanup of the vicinity properties at Edgemont, South Dakota, was subsequently added by enactment of Public Law 97-415. Along with their designation, the priorities for the processing sites were also determined in consultation with the EPA Administrator. Nine processing sites were designated as high priority, six as medium priority, and nine as low priority.

From 1980 through 1983, a wide range of activities was carried out prior to the start of actual remedial actions. Responsibility for day-to-day project management of Title I activities was assigned to the Department's Albuquerque (New Mexico) Operations Office. Negotiation of cooperative agreements with the 10 States involved in the program was initiated. Data collection and analysis required by the National Environmental Policy Act began for the high priority sites. Coordinated Federal and State property acquisition procedures were developed, and steps were taken to acquire the Canonsburg, Pennsylvania, processing site. Commercial interest in reprocessing the tailings was solicited, but none was found due to the high

cost of reprocessing compared to uranium value. A technology development program was initiated to develop the most cost-effective methods for radon suppression and stabilization of the tailings in accordance with the standards then being developed by the EPA.

To identify those properties in the vicinity of the processing sites which had become contaminated with material from the sites, the Department obtained data from earlier surveys conducted by the EPA or States and, in addition, initiated aerial surveys of the areas surrounding the sites and street-to-street surveys using a vehicle developed for this purpose. This led to the designation of 8,156 properties for possible inclusion under the Title I program.

EPA standards for this program were issued in January 1983 and became effective on March 7 of that year. This enabled the Department to proceed with the National Environmental Policy Act documents, final remedial action plans, and engineering designs. Remedial actions are now underway at the first three high priority sites. Preparations are well underway to begin work at the remaining sites.

Progress has also been made in the area of vicinity property cleanup. Of the 8,156 properties initially designated for possible inclusion in the Uranium Mill Tailings Remedial Action (UMTRA) project, 1,600 have been surveyed to determine if the level of contamination exceeds EPA standards. Approximately 960 of these 1,600 require remedial action and have been included in the program. Based on this experience, we estimate that a total of about 4,500 vicinity properties will require cleanup. Remedial action has been completed at approximately 150 properties and is now underway at an additional 170 sites.

## LESSONS-LEARNED: TITLE I COSTS AND SCHEDULES

While the Department has been reasonably successful in implementing the UMTRA Title I project, we have experienced problems with project schedules and costs.

Milestones for several of the sites have been delayed due to the difficulties in achieving a consensus on a course of action among the numerous parties involved in each individual project. One of the most prevalent issues is reaching agreement on stabilization-in-place versus relocation of the tailings. The latter course of action is more acceptable to most local communities, even though relocation of the tailings is usually more expensive, time consuming, and not technically necessary in many cases. As a result of these "front end" delays, work on as many as 15 sites may be underway simultaneously in the remaining years of the cleanup effort authorized by Public Law 95-604.

The Department has also experienced considerable growth in the total estimated cost of the project; we are currently revising our cost projections based on experience and initiating a series of actions to better control cost growth. However, it is clear that the total cost has grown from initial estimates of less than \$200 million (1978 dollars) prior to enactment of Public Law 95-604 to the range of \$700 to \$900 million (escalated through 1990) as standards have been set and actual experience gained. The current maximum cost for each of the Title I projects is included in the Department's response to questions posed in the Subcommittee's June 28, 1985, letter.

Several factors contribute to these cost and schedule difficulties.

#### Schedule Delays

Public Law 95-604 requires the Department of Energy to obtain the formal concurrence of the NRC and the affected State or Indian Tribe in the planning and performance of all remedial actions. In addition, the owners of the sites and adjacent properties, local governments, local citizen groups, and other Federal agencies, particularly the Department of Interior, play a role in these plans and negotiations. The opposition, or even the uncertainty, of any of these parties with respect to proposed remedial action plans requires resolution and often causes extensive delay. The start of remedial action at Salt Lake City, Utah, for example, was delayed approximately 1 year while reaching agreement on the Remedial Action Plan; similarly, work at both Riverton, Wyoming, and Gunnison, Colorado, will be delayed about a year and about 6 months at Durango due to extended negotiation on the Remedial Action Plan. Much of this opposition is based on an absence of general public acceptance or on varying interpretation of the EPA standards.

Other delays can be caused by the complexity of the Federal procurement process in obtaining contractor support and the acquisition of real estate. For example, 1 to 1 1/2 years are required to get a contractor under contract and doing effective work. Similar time scales apply to completing cooperative agreements with State governments and Indian Tribes.

The Department is currently reviewing its overall completion schedules to reflect experience of the past 2 years. We anticipate that the types of delays I have noted and the total number of projects to be efficiently managed may require up to a 2-year delay (beyond 1990) before final

completion and certification of some of the Title I sites, including two of those designated high priority.

#### Cost Escalations

A major contributor to cost escalations is the higher-than-anticipated cost of meeting the requirements of the EPA standards (40 CFR Part 192), particularly the need to assure isolation from the environment for a 1000-year period. Important areas of high cost are features for ground water protection and protection against flooding and river migration. We are currently making an assessment of how the various requirements and interpretations of the standards bear upon Title I costs and plan to discuss this experience with the EPA, NRC, and Congress.

A second and related cost factor is the need to acquire considerably more site characterization data (particularly on ground water) than had been anticipated to satisfy National Environmental Policy Act and other requirements.

A third cost factor has been the difficulty and extended time in negotiating agreement on remedial action plans among the many parties involved in the project. The examples of schedule delays listed previously also have had an impact on project cost.

Lastly, costs have been impacted by the requirement to pay wage rates governed by the Davis-Bacon Act for Federal construction projects, even though work at mill tailing sites does not involve construction in the typical sense of the term. It is estimated that labor rates are increased as much as 25 percent by the requirements of Davis-Bacon.

## PROPOSED URANIUM MILL TAILINGS RECLAMATION ACT OF 1985

Title II of the Uranium Mill Tailings Radiation Control Act of 1978 specifically assigned responsibility for reclamation of active, licensed sites to the mill owner, using standards to be established by the EPA under direction of the NRC or the agreement State, as its licensor.

Accordingly, the Department seriously questions the premise of the proposed legislation that would require U.S. utilities with nuclear powerplants and the Federal Government to pay the bulk of the costs to clean up currently licensed, commercial facilities.

The situation in this case is different from those sites included in Title I, which were already inactive and which had been almost exclusively involved in producing uranium for Atomic Energy Commission needs. The precedent of relieving the owners of commercial facilities involved in nuclear production or processing activities of the site cleanup costs is an undesirable one for the nuclear industry and for waste generators in general.

## POTENTIAL IMPACTS OF THE PROPOSED LEGISLATION

The proposed legislation, if enacted, would authorize the Department to carry out the reclamation of currently licensed sites in a manner similar to that being followed for the Title I sites. Based on our experience in administering the Title I program, we have a number of serious concerns with this approach in addition to our basic policy concern, which I have discussed.



The management structure proposed by the Act would be extremely complicated and difficult to administer. The Department would be required to execute contracts with each site owner, each nuclear utility, each affected State or Indian Tribe, and each project management and remedial action contractor. In addition, DOE would have to operate in a licensee relationship with the NRC. Our experience with the current UMTRA project strongly indicates that disciplined project cost and schedule control would be extraordinarily difficult under these circumstances. The abundance of management interfaces, many with comment and/or approval rights, would make the process uncontrollable in the project management sense. A simpler approach is needed to avoid large uncertainties in the cost and time required to carry out the program. The preferred approach would be to leave the responsibility for reclamation to the mill owners, to be carried out under their license consistent with Title II of Public Law 95-604.

The proposed Act would also establish a Uranium Mill Tailings Fund to collect and manage funds for tailings remediation. We are opposed to this funding mechanism for both practical and procedural reasons.

Based on the Department's experience in managing the Nuclear Waste Fund, this fund would require that we establish a sizable financial management organization within the Department for this purpose, further adding to the overhead cost and complexity of the project.

The proposed fee on power generated by nuclear utilities as a major contributor to tailings cleanup costs is intended to spread these costs over a wide base and to reflect the status of these utilities as benefactors of the process that generated the tailings. The proposed fee does not appear to distribute cleanup costs fairly and equitably. First,

since 14 to 15 percent of the uranium mined and milled in the last 10 years has been marketed overseas, the domestic nuclear power industry would contribute to the Fund while foreign generators of electricity from nuclear power would not. Second, no direct relationship exists between the volume of tailings to be cleaned up (and the cost of that cleanup) and the amount of electricity generated by individual utilities in the future. Lacking the equivalent of a proportional relationship between power generated and spent fuel created--the basis for the Nuclear Waste Fund fee--the rationale for establishing the utility contribution to the Uranium Mill Tailings Fund at 0.15 mill per kilowatt hour and creating an earmarked fund is unjustified.

Several specific provisions of the Act are objectionable. Particularly, we find no justification for imposing budget submission requirements that are extraordinary to Chapter II of Title 31 or for exempting the fund in law from the apportionment requirements of the Antideficiency Act.

Title II of the 1978 Uranium Mill Tailings Radiation Control Act adequately provides for remediation of active sites licensed on or after January 1, 1978, by the site owners under the terms of their license and the EPA standards developed for such sites. There are several advantages in leaving the responsibility for reclamation of the processing site with the site owner/operator. First, the owner/operator is already familiar with the history and characteristics of the site and its environs, with local landowners, citizens groups and governments, and with the regulatory authority under which he holds his license. Second, the insertion of an "outside" organization such as DOE and its costs are avoided and lines of authority are shortened. Third, the difficulties inherent in Government

project administration would be avoided. Finally, the owner would have a strong incentive to control costs.

#### TITLE II COST ESTIMATES

Based on current estimates of the quantity of tailings associated with the uranium sites covered by the proposed legislation, and assuming direct applicability of the previously cited UMTRA Title I project cost experience on processing site remediation, we estimate the total cost of cleanup of the active (Title II) sites to meet the EPA standards could exceed \$4 billion. Some reduction relative to the UMTRA experience may be possible due to economies of scale associated with the larger active sites and to not having to relocate piles, but there is insufficient data on either issue to make a meaningful estimate. However, this cost could be as much as 30-40 percent less without Federal control and management of the projects.

NRC financial surety estimates for remedial action at these sites, by the site owner, under the existing Title II requirements of the Uranium Mill Tailings Radiation Control Act, are much lower, totaling less than \$200 million. EPA has made an estimate of \$350 million on a similar basis. Although we believe these conceptual estimates will prove to be low, they reinforce our belief of substantial savings to be achieved without Federal management.

Our estimate excludes costs associated with "vicinity property" cleanup because no estimates have been made on the extent of offsite contamination associated with these sites. In addition, we have no estimate for thorium

processing sites because we have no information at this time on the number or characteristics of such sites.

It is clear that the cost of remediation to meet the EPA standards will be large, and the Federal Government's proposed share would constitute a major commitment of Federal funds. We strongly believe that the best way to control and limit this commitment, if there were to be one, is to avoid unnecessary overhead and inefficiencies by eliminating the major role proposed for DOE and keeping the responsibility for management of the remediation effort and careful control of all costs, including his own substantial share, with the private mill site owner.

#### RECOMMENDATIONS

Consistent with the intent of Public Law 95-604 and based on our experience to date in carrying out the Title I program, the basic approach originally outlined by Congress remains valid.

Licensed sites, as they reach the end of their useful lives, should be the responsibility of the owner/operator. In addition, the sites can be adequately and more cost-effectively decommissioned by the owner/operator than by reassigning this responsibility to DOE.

While recognizing the need to resolve a difficult problem, DOE recommends that both Subcommittees reconsider the proposed legislation in light of the issues we have raised here today. We would be pleased to provide any further information and advice that would assist your respective staffs in formulating a program that more appropriately meets the overall objectives for this effort.

Mr. Chairman, this concludes my statement. I would be pleased to respond to any questions at this time.

PREPARED TESTIMONY  
SUBMITTED BY

JOHN G. DAVIS, DIRECTOR  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
ON BEHALF OF THE  
U.S. NUCLEAR REGULATORY COMMISSION

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

I AM JOHN G. DAVIS, DIRECTOR OF NRC'S OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS. AMONG MY RESPONSIBILITIES AS DIRECTOR OF THAT OFFICE IS RESPONSIBILITY FOR NRC'S LICENSING OF URANIUM RECOVERY ACTIVITIES.

I AM PLEASED TO APPEAR HERE TODAY TO PROVIDE THE NUCLEAR REGULATORY COMMISSION'S VIEWS ON S.1004 AND H.R.2236, "THE URANIUM MILL TAILINGS RECLAMATION ACT OF 1985."

WE ARE PLEASED, ALSO, TO NOTE THAT IN THE DEFINITION OF "ACTIVE URANIUM OR THORIUM PROCESSING SITE" AND "ACTIVE SITE," [SECTION 10.(1)(B)], THE SCOPE OF REMEDIAL ACTIONS HAS BEEN EXPANDED TO INCLUDE PROPERTY IN THE VICINITY OF THE SITE THAT IS CONTAMINATED WITH BYPRODUCT MATERIAL. UNDER THE COMMISSION'S PRESENT AUTHORITY, A LICENSEE IS REQUIRED TO PERFORM REMEDIAL ACTION OFFSITE ONLY IF IT CAN BE SHOWN THAT THE TAILINGS WERE DEPOSITED AFTER 1978, THE YEAR THEY BECAME SUBJECT TO REGULATION. TAILINGS REMOVED FROM A SITE PRIOR TO 1978 WERE NOT DEFINED AS BYPRODUCT MATERIAL AND, HENCE, ARE BEYOND THE COMMISSION'S AUTHORITY. WE BELIEVE THAT THERE ARE PROPERTIES IN THE VICINITY OF ACTIVE SITES THAT MAY BE CONTAMINATED WITH NON-REGULATED TAILINGS. IT APPEARS THAT THE ACT WOULD NOW PROVIDE A MECHANISM FOR FUNDING AND IMPLEMENTING CLEANUP OF SUCH VICINITY PROPERTIES.

AS AN INDEPENDENT REGULATORY AGENCY, AND WITH RESPECT TO THE PROPOSED BILLS, THE COMMISSION IS CHIEFLY CONCERNED THAT ITS RESPONSIBILITIES ARE CLEARLY DEFINED AND THAT SUFFICIENT AUTHORITY AND RESOURCES ARE MADE AVAILABLE TO CARRY OUT THOSE RESPONSIBILITIES. MY COMMENTS TODAY WILL BE DIRECTED TOWARD THOSE CONCERNS. I WOULD LIKE TO NOTE THAT THE NRC HAS PREVIOUSLY RESPONDED TO WRITTEN QUESTIONS RELATIVE TO THESE BILLS.

AS WRITTEN, THE BILLS LEAVE US UNSURE AS TO THE ACTUAL INTENT OF CERTAIN PROVISIONS AS THEY MAY APPLY TO THE NRC. FOR EXAMPLE, A PRINCIPAL FEATURE IS A PROVISION FOR LICENSES AT ACTIVE SITES TO BE TRANSFERRED TO THE SECRETARY OF ENERGY BEFORE SITE CLOSURE [SECTION 3(E)].

PRESENTLY, THE ROLE OF THE COMMISSION WITH REGARD TO ITS LICENSEES IS CLEARLY ESTABLISHED. THE LICENSEE'S RESPONSIBILITIES FOR ACTIONS RELATIVE TO THE MANAGEMENT OF TAILINGS AND THEIR ULTIMATE DISPOSAL ARE DEFINED THROUGH THE PROVISIONS OF THE LICENSE AND THE COMMISSION'S REGULATIONS. EACH LICENSE INCLUDES A PRELIMINARY LICENSEE PLAN APPROVED BY THE NRC FOR THE RECLAMATION OF TAILINGS. THIS PLAN IS REVIEWED AND FINANCIAL SURETY ARRANGEMENTS ARE UPDATED PERIODICALLY BY THE LICENSEE WITH NRC APPROVAL TO REFLECT CHANGES. WHEN THE OPERATOR IS READY TO CLOSE THE SITE, THE LICENSEE IS OBLIGED TO PREPARE A FINAL, DETAILED RECLAMATION PLAN FOR COMMISSION APPROVAL. UPON

THE LEGISLATION WOULD TRANSFER THE NRC LICENSE TO THE SECRETARY NO LATER THAN THE DATE ON WHICH THE SECRETARY BEGINS RECLAMATION AND DECOMMISSIONING ACTIVITIES. IT IS NOT CLEAR IF THE BILLS INTEND THAT THE DEPARTMENT OF ENERGY ASSUME THE SAME ROLE AS THE NRC LICENSEE IT IS REPLACING AND THEREBY CARRY OUT THE DETAILS OF THE LICENSEE-DEVELOPED AND NRC-APPROVED RECLAMATION PLAN UNDER NRC REGULATORY OVERSIGHT. ALSO, SINCE THE LEGISLATION SPECIFIES THAT DOE IS TO SELECT AS WELL AS PERFORM RECLAMATION, DECOMMISSIONING, OR OTHER REMEDIAL ACTIONS, THE BILLS CAN BE READ THAT DOE IS ALLOWED TO REVISE THE LICENSEE'S NRC-APPROVED RECLAMATION PLAN AFTER DOE ASSUMES THE LICENSE. THE TRANSFER OF THE LICENSE FROM THE NRC LICENSEE TO DOE CAN BE READ TO MEAN THAT DOE STANDS IN THE PLACE OF THE FORMER LICENSEE AND BECOMES, AT THAT TIME AN NRC LICENSEE. IF THIS IS THE INTENT, NRC BELIEVES IT WILL HAVE THE SAME REGULATORY AUTHORITY OVER DOE AS IT DID OVER THE PREVIOUS LICENSEE, INCLUDING THE SAME AUTHORITIES TO APPROVE ACTIONS OF THE DOE LICENSEE AND TO ENFORCE EXISTING LICENSE CONDITIONS AS WELL AS COMMISSION REGULATIONS.

UNDER TITLE I OF THE URANIUM MILL TAILINGS RADIATION CONTROL ACT OF 1978, THE COMMISSION CONCURS IN REMEDIAL ACTIONS BY DOE FOR INACTIVE SITES, BUT ONLY EXERCISES LICENSING AUTHORITY OVER DOE



AFTER SITE CLOSURE IS COMPLETED. FOR ACTIVE SITES, THESE BILLS APPARENTLY WOULD PROVIDE THE COMMISSION REGULATORY AUTHORITY OVER DOE TO ALSO INCLUDE THE PERIOD OF PERFORMANCE OF RECLAMATION BY DOE AT ACTIVE SITES. FOR BOTH ACTIVE AND INACTIVE SITES, THE COMMISSION WOULD LICENSE DOE TO PROVIDE LONG TERM CUSTODIAL CARE FOR CLOSED SITES.

THE REQUIREMENT [SECTION 3(E)] THAT A LICENSE ISSUED BY AN AGREEMENT STATE BE TRANSFERRED TO THE SECRETARY OF ENERGY RAISES A SIGNIFICANT ISSUE. UNLESS THE LEGISLATION EITHER PROVIDES FOR STATE REGULATION OF DOE OR MAKES PROVISIONS FOR THE NUCLEAR REGULATORY COMMISSION TO REASSUME REGULATORY AUTHORITY FOR THE LICENSE IN QUESTION, THE TRANSFER COULD NOT BE EFFECTED IF IT IS INTENDED THAT DOE BECOME A LICENSEE BECAUSE AN AGREEMENT STATE DOES NOT NOW HAVE AUTHORITY TO REGULATE A FEDERAL AGENCY SUCH AS DOE.

WITH REGARD TO FINANCIAL ASSURANCES, CURRENTLY FOR ALL ACTIVE MILL LICENSEES, THE NRC AND AGREEMENT STATES HAVE REQUIRED VARIOUS PLANS TO GUARANTEE FUNDS FOR RECLAMATION. THE METHOD OF GUARANTEE AND THE AMOUNT OF FUNDS VARY FROM SITE TO SITE. RECOGNIZING THAT THE BILLS WOULD PROVIDE A HIGHER LEVEL OF ASSURANCE OF ADEQUATE FUNDS, THE NRC BELIEVES IT WOULD BE HELPFUL TO IDENTIFY THE DISPOSITION OF THOSE EXISTING FUNDS.

IN ADDITION TO THE ABOVE, WE HAVE IDENTIFIED SOME OTHER ASPECTS OF THE LEGISLATION RELATING TO THE NRC WHERE CLARIFICATION WOULD BE HELPFUL.

- O IN SECTION 3(A), THE WORDING WOULD ALLOW DOE'S DESIGNEE, POSSIBLY THE STATE, A PREVIOUS LICENSEE, OR OTHER CONTRACTOR, TO BE RESPONSIBLE FOR THE SELECTION OF REMEDIAL ACTION. UNDER CURRENT NRC/LICENSEE RELATIONSHIPS, IF DOE IS THE NRC LICENSEE FOR RECLAMATION PURPOSES, DOE WOULD BE RESPONSIBLE, WITH LRC APPROVAL, FOR THE REMEDIAL ACTION.
- O THE COMMISSION HAS NO SPECIFIC MECHANISM IN PLACE FOR MAKING THE DETERMINATION MENTIONED IN SECTION 3(C) THAT A "PERMANENT CESSATION OF OPERATIONS" HAS OCCURRED AT A SITE. WE BELIEVE THAT SUCH DETERMINATIONS SHOULD RELY ON CERTIFICATIONS BETWEEN THE NRC LICENSEE AND THE DOE.
- O WHETHER ENTIRE SITES ARE TO BE TRANSFERRED TO DOE, OR ONLY AREAS USED FOR FINAL DISPOSAL IS NOT CLEAR. SIMILARLY, IF ENTIRE SITE TRANSFER IS NOT INTENDED AFTER LICENSE TRANSFER, NO PROVISION IS MADE FOR REGULATION OF BUILDINGS, STRUCTURES, OR EQUIPMENT REMAINING ON SITE WHICH ARE NOT TRANSFERRED TO DOE OWNERSHIP.

IN CONCLUSION, WE BELIEVE THAT GREATER CLARITY IN THE INTENDED REGULATORY RELATIONSHIP BETWEEN THE NRC LICENSEE, THE NRC, THE DOE, AND ANY INVOLVED AGREEMENT STATE IS IMPORTANT FOR THE SUCCESSFUL ACCOMPLISHMENT OF THE PROVISIONS OF S.1004 AND H.R. 2236.

STATEMENT OF WM. PAUL ROBINSON  
REPRESENTING SOUTHWEST RESEARCH AND INFORMATION CENTER

before a joint session of the

SENATE ENERGY AND NATURAL RESOURCES COMMITTEE  
and the  
HOUSE INTERIOR AND INSULAR AFFAIRS COMMITTEE

July 16, 1985

Representative Udall, Senator Domenici, and members of the Subcommittees.

My name is Paul Robinson. I am the Research Director at Southwest Research and Information Center in Albuquerque, New Mexico. I am pleased to be with you today to discuss the proposed Uranium Mill Tailings Reclamation Fund, embodied in H.R. 2236 and S. 1004.

It is appropriate that we should address today the continuing problem of cleaning up the 170 million tons of radioactive and toxic uranium mill tailings at licensed mills in the U.S. As you are aware, today is the sixth anniversary of the so-called Church Rock Mill Tailings Spill, the largest single release of radioactive materials, by volume, ever in the nation.

The mill tailings dam break at Church Rock illustrated the need for major improvements in New Mexico's uranium mill licensing program. While significant advances in our state's ability to regulate the uranium milling industry have been made, New Mexico's rules remain weaker than those of any of the other Agreement States with active uranium processing and are not compatible with the various Federal requirements.

I briefly mention a little history about an unfortunate accident because it is integral to understanding the public policy and environmental questions raised by these two bills. Our feeling is that the problems at Church Rock and the four other active tailings sites in New Mexico are not going to be

alleviated by these bills. We believe we need a tougher Federal approach to oversight of State Agreement programs, not a system of 85-percent public financing of the cleanup of wastes that is legally and morally the obligation of the companies who generated the wastes.

Our primary goal — and, I might add, the goal of many citizen and conservation groups in the West with whom we have been in contact — is to clean up these hazardous tailings piles as quickly as possible. During the current depression in the uranium industry — a situation we are not unconcerned about — we see tailings cleanup as the primary way of putting unemployed miners and millers back to work.

But for a number of reasons, the bills before us today will not do the job any sooner than under existing law. Additionally, the concept of having the public pay for the cleanup of wastes the public had no responsibility in generating is a significant public policy matter that has not been the focus of a broad national debate.

We have outlined in greater detail the reasons we are skeptical of these proposals in a paper we distributed two months ago to the staffs of your committees, to key policymakers in New Mexico, and to numerous environmental groups throughout the U.S. That paper is attached to my statement as Appendix A. I will briefly review the concerns it raises.

First, Congress has never established a national policy to deal with failing industries who have obligations under the law to clean up their wastes. We are afraid that if Congress gives taxpayer and ratepayer funds to uranium mill operators to the tune of a billion dollars or more, other industries with waste control and cleanup obligations may begin lining up on the Capitol steps asking for help.

That tailings cleanup is the responsibility of the individual licensees

is clearly established by Sec. 161(x)(1) of the Atomic Energy Act of 1954, as amended by Section 203 of the Uranium Mill Tailings Radiation Control Act of 1978, and further established by the extensive legislative history surrounding the Mill Tailings Act. Perhaps the clearest statement of that intent was made by Rep. Udall in this opening remarks before the House Interior Committee on July 10, 1978:

"Long-term control of tailings requires that mill companies make secure financial arrangements in the form of bonds or other surety....The approach of this legislation puts the costs of mill tailings control for perpetuity squarely on the shoulders of the nuclear industry."

So that there is no doubt about Congress's intent in 1978 that individual licensees should pay for tailings cleanup, I have attached as Appendix B to this statement citations from the legislative record pertaining to financial surety, and I invite you and your staffs to review it.

Second, while we are aware and concerned that the industry is nearly at a standstill, we do not believe that the individual mill operators have demonstrated that they are financially incapable of paying for cleanup. Few, if any, are suffering cash flow problems and many have recently taken tax write-offs for reclamation expenses. Others are actively engaged in purchasing uranium on the spot market to meet delivery obligations under contracts signed many years ago.

We also have noticed that in recent years, many large companies have spun off their uranium mining and milling segments into subsidiaries that can be isolated from the parent firms. In this way, the financial conditions of the subsidiaries are made to appear woeful. But the operating licenses for the mills are in many cases held by the parent firms. Certainly these large corporations have the assets and cash flows to afford cleanup bills ranging from \$30 million to \$130 million.

Based on our conversations with attorneys for the uranium producers, we understand that the operators are not necessarily incapable of meeting their obligations, but simply unwilling because they object to the stringency of the Nuclear Regulatory Commission's existing and proposed regulations and the Environmental Protection Agency's October 1983 standards.

Southwest Research, and of course other environmental groups, have a different view of the Federal regulations and standards: we think that they confer on the public excessive residual risks and in some cases do not go far enough in protecting natural resources, such as ground water. And we note that virtually every active tailings pile in the country has contaminated the ground water beneath it, and in some cases, to as many as 1.5 miles outside of the facility boundary. We would be happy to submit to the Subcommittees extensive documentation of those ground water impacts to support our view.

But inasmuch as the standards are being litigated — and we expect the 10th Circuit to rule on the various petitions for review by this fall — we do not believe that the time is ripe for the industry to seek public financing simply because it objects to the control level in the rules.

Third, we see the proposed legislation as simply creating another opportunity for litigation in the future. We do not believe that the utilities will accept their proposed 55-percent share without continuing the litigation over the stringency of the standards.

Fourth, even if we agreed with the concept and ignored the public policy questions, we believe the bills are written in a way that institutionalizes delay. For instance, Section 3(c) of the bills permits reclamation only when an operator gives the Department of Energy permission to begin reclamation. At a minimum, a one- or two-year diligence provision would be needed to insure that a pile was not left inactive for dozens of years.



The bills' limitations on liability effectively insulate the operators from financial responsibility for cleaning up damaging spills and accidents that occur during operations. And if the funding mechanism of the bills is enacted, we can see an operator delaying cleanup by continuing to put tailings on an existing pile in hopes that the entire pile will then will eligible for 85-percent public financing for cleanup.

Certainly the funding levels themselves are too low. The Department of Energy's program for cleaning up inactive tailings piles is running close to \$17 per ton on the average, and ranging from \$4 to \$77, according to published reports which are attached as Appendix C. According to budgeting officials with DOE, the estimated \$3.75 per ton for the active sites is based only on moving dirt and does not take into account site characterization, environmental review and impact assessment, or the possibility of relocation of piles. Based on those statistics, we believe that the total cost for stabilizing all 170 million tons will approach \$2 billion, of which the Federal share would increase to about \$600 million under the proposed financing formula.

Since these bills were introduced, we have given great thought to the question of whether we can expect any of the active sites to be stabilized and returned to State or Federal ownership before the turn of the century. (It seems likely that cleanup will not occur by then without Congress requiring it.) I would like to share some of our thoughts and make a few recommendations.

First, we believe Congress should commission the General Accounting Office to review and comment on the policy and legal implications of public financing for waste cleanup where there is existing law that clearly establishes financial responsibility. GAO could also review the financial

conditions of individual licensees to assess whether they are indeed incapable of paying for tailings cleanup, and whether this recent movement toward isolating the licensees from the parent firms are inhibiting the NRC or the Agreement States from obtaining adequate surety for reclamation.

Second, the Office of Technology Assessment could be requested to review and assess the controversy over the standards and analyze what other roadblocks have arisen in implementing the requirements of the Mill Tailings Act. OTA might be asked to compare the risk levels of the EPA active-site standards to the risk levels of other regulated pollutants. Our concern is and has been that EPA's standards for mill tailings incorporate residual risks that are higher than EPA has ever allowed for any other pollutant it has moved to control.

Third, we ask your Committee to review the Agreement State programs. We feel strongly that the States must continue to exercise their authority under agreements with the NRC to regulate tailings within their boundaries. But to do so effectively, the States must adopt regulations that are equivalent to NRC's minimum national standards. This is the clear requirement of the Mill Tailings Act and the clear intention of Congress. Appendix B of my statement contains numerous references in the legislative history to the necessity for imposing "minimum national standards" on the States.

New Mexico's current standards are, on their face, less stringent than any of the existing Federal rules. We are not alone in that view; the Director of the Environmental Improvement Division and the chief of the Division's Radiation Protection Bureau have made similar public statements to regulatory bodies in New Mexico in the past four months (see Appendix C).

Additionally, a group of scientists appointed by the Governor in 1983 to review our uranium regulations agreed that in many cases the State needs

additional legislative and regulatory authorities and a toughening of many of the specific rules addressed by NRC and EPA. I have attached a copy of the scientists' report to the Governor as Appendix D.

New Mexico's rules are less stringent due to an abuse of Section 204(e) of the Mill Tailings Act, the provision which required Agreement States to adopt regulations that are "equivalent, to the extent practicable, or more stringent than" the NRC's regulations. Our Environmental Improvement Board in 1981 adopted industry's views that many of the NRC's requirements were not practicable for New Mexico. Little evidence was presented that demonstrated why those requirements are not practicable in New Mexico, but appear to be practicable in Colorado, Texas, and Washington state, all of which have adopted revised tailings requirements and all of which have entered into amended agreements with NRC. New Mexico is the only Agreement State that has not.

Lastly, our state's program needs stronger oversight by NRC. We are afraid, however, that NRC will not get tough with New Mexico over the compatibility of our tailings program without a little gentle prodding from Congress. The national price of weak regulation in New Mexico will be a continuing controversy over the stringency of standards in other States. We do not want the inadequacies of our program to become the state-of-the-art for uranium tailings regulations in other States.

I want to emphasize, Mr. Chairman, that Southwest Research supports New Mexico keeping its program. The EID will be moving to strength our regulations before the Environmental Improvement Board next year, and we will do everything in our power to assist the competent and well-intentioned regulators that Governor Anaya has seen fit to appoint.

As for the proposed legislation, we can at this time support only the

proposed 30-percent Federal contribution, and only for those active tailings piles with AEC-generated tailings. For the largest of the piles, Kerr-McGee's at Ambrosia Lake, N.M., those government tailings account for about one-third of the total (10 million tons out of a total of more than 33 million tons).

The legislative history of the Mill Tailings Act shows that Congress was concerned back in 1978 about commingled tailings (e.g., see the remarks of Sen. Hansen, Appendix B, page 9). DOE reported to Congress in 1982 on the problem. We think there is adequate reason for a Federal program to assist those operators with commingled tailings in the financing of cleanup. But such assistance should in no way be viewed as a precedent for Government financing of waste cleanup.

Mr. Chairman, in the past four months the staff of Southwest Research has had numerous face-to-face discussions about these bills with the staff and Director of EID, with the staffs of your respective committees, with attorneys for the uranium producers, and, of course, with representatives of both national and local environmental groups. And we have spent literally hundreds of hours talking among ourselves and researching the public policy questions and implications of these bills.

We have concluded that as much as we would like to throw our hats in the ring with those who believe that these bills will solve the industry's present problems, we nonetheless cannot support the donation of public monies to businesses which appear to be perfectly capable of meeting their legal obligations.

I appreciate the opportunity to appear before you and would be happy to answer any of your questions or furnish you and your staffs with additional information. Thank you.

ATTACHMENT A:

THE URANIUM TAILINGS RECLAMATION FUND: IS IT NEEDED?  
Questions and Comments About S. 1004 and H.R. 2236

prepared by Southwest Research and Information Center  
Albuquerque, New Mexico

May 15, 1985

Two similar pieces of legislation designed to create a national fund to pay for cleaning up the 200 million tons of uranium mill tailings at licensed mills were introduced recently in Congress. The Senate version, backed by Sens. Domenici (NM), Bingaman (NM), and Simpson (WY), differs only slightly from the House version introduced by Rep. Richardson (NM). Both would have nuclear utilities, and therefore ratepayers, picking up 55 percent of the cost of cleanup, the federal government 30 percent, and the owners/operators of uranium mills 15 percent. The cost of public financing of tailings cleanup is estimated to range from about \$1 billion to \$2 billion.

Southwest Research and Information Center (SRIC) remains opposed to the concept of ratepayer and taxpayer-funded cleanup of mill tailings at active processing sites. Nearly 75 percent of the tailings at the nation's 27 uranium mills were generated by companies operating in the free market (i.e., at a profit) since 1971. The Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) provided for a comprehensive tailings funding mechanism through its mandatory surety and bonding provisions (UMTRCA Sec. 203; Atomic Energy Act, Sec. 161.x.(1)). The mill operators have shown no interest in cleaning up since the passage of the law. They have litigated every set of environmental standards issued by federal agencies and have successfully lobbied for and received major weakening amendments to UMTRCA.

SRIC does not oppose federal (i.e., taxpayer) funding of cleanup of those tailings generated by companies operating under exclusive contracts with the old Atomic Energy Commission prior to 1971. UMTRCA (Title III) recognized the potential problem of "commingled" tailings when it ordered studies of two old millsites in New Mexico. Commingled tailings account for only 56.1 million tons of all active tailings, however. And those wastes are located at only 13 of the 27 licensed mills.

To begin to determine public sentiment about the Tailings Fund concept, SRIC has polled 29 conservationists and citizens who have worked for many years on the uranium tailings problem. To date, SRIC has received 10 responses. Of those, seven were opposed to the concept and none were in favor of it. Seven were opposed to the approach taken by the two proposed bills. Only one person supports that approach, and only if the current Environmental Protection Agency standards are imposed and the mill operators end their litigation over the standards. If the industry made major concessions, four people said they would support public financing of cleanup, two said they would consider supporting it, and two said they could not support it even with concessions. And finally, four of five people said they felt that current law is adequate to clean up uranium mill tailings. SRIC's poll is continuing and additional results will be made available in the next two weeks.

With those concerns and initial public response in mind, SRIC has prepared a list of threshold questions it asks that Congress and the operators address prior to consideration of the two bills. That list is supplemented by several concerns with specific sections of the bills. Both lists are not exhaustive. SRIC staff (Chris Shuey, Lynda Taylor or Paul Robinson) would be happy to answer any questions interested parties have about our position in this important public policy matter.

#### THRESHOLD QUESTIONS

1. Are the mill operators financially unable to pay for the cost of cleanup? The operators should provide detailed financial statements so the Congress can determine if they indeed have insufficient cash flow over the next five to 10 years to pay for cleanup.
2. What are the bases for the funding proportions? If mill operators presently are presumed to pay 100 percent of the cost, why have they selected only 15 percent under the proposed legislation? What basis is there for the 55-percent utility funding portion?
3. What were the terms of long-term contracts signed by the mill operators (a) with the federal government prior to 1971? (b) with electric utilities after 1971? What profit margins were represented in those contracts? Did the contracts call for certain monies to be set aside for cleanup?
4. How many tons of uranium mill tailings are located at licensed commercial processing sites? How many licensed uranium mills house commingled tailings? Are DOE's 1982 commingled tailings figures accurate?
5. When was mandatory reclamation or stabilization (i.e., cleanup) of tailings first envisioned (a) by the federal government? (b) by individual agreement states? When were the health and environmental hazards of mill tailings first recognized (a) by the federal government? (b) by the states? (c) by the tribes?
6. Will public financing of cleanup remove incentives for mill operators to implement protective measures during operations? Knowing that the public will pay 85 percent of the cost of cleanup, an operator would have no reason to spend money for phased disposal in trenches or on-going reclamation during operations.
7. Will these bills accomplish cleanup any sooner than under existing law? The lack of a diligence provision that requires initiation of cleanup after a certain period of inactivity makes cleanup no more likely than under current requirements.
8. What guarantee is there that the mill operators will not continue to fight the stringency of environmental and health standards in court? Why will these bills not allow the kinds of delays by operators that have hampered implementation of reclamation programs since UMTRCA was adopted in 1978?

#### SPECIFIC QUESTIONS AND COMMENTS ABOUT THE PROPOSED BILLS

1. Sec. 2 Findings. Finding (a)(2) flies in the face of Sec. 161.x.(1) of the Atomic Energy Act, which authorized the Nuclear Regulatory Commission to "ensure

## ATTACHMENT B:

Excerpts from the legislative history of the  
 Uranium Mill Tailings Radiation Control Act of 1978 (P.L. 95-604)

concerning:

**FINANCIAL SURETY ARRANGEMENTS FOR ACTIVE URANIUM MILL TAILINGS  
 AND UPGRADING OF AGREEMENT STATE URANIUM MILL LICENSING PROGRAMS**

The following excerpts were taken from the Hearing Transcripts, Congressional Records, and Committee Reports cited below. Page numbers refer to the particular pages on which the citations appeared in the Transcripts, Records, or Reports.

**HEARING TRANSCRIPT CITATIONS**

"Uranium Mill Tailings Control." Hearings before the Subcommittee on Energy and the Environment of the Committee on Interior and Insular Affairs, House of Representatives, Ninety-Fifth Congress, Second Session, on H.R. 13382, H.R. 12938, H.R. 12535, and H.R. 13049, June 26, 27, and July 10, 17, 1978; Serial No. 95-30.

June 27, 1978

Testimony of Joseph Hendrie, Chairman of the Nuclear Regulatory Commission.

- p. 76: "With the advent of NEPA in 1970, additional authority was provided that enabled operating uranium mill licenses to be conditioned to require proper disposition and stabilization for environmental reasons after operations had ceased. Under this authority, NRC has obtained commitments from currently licensed active uranium mill operators for proper long-term disposition of mill tailings."

Testimony of Betty Perkins, New Mexico Energy and Minerals Department.

- p. 104: "The longer rehabilitation [i.e., stabilization] is delayed the more extensive an area which will require cleanup, the greater the financial cost, and most importantly the longer the time of exposure, the greater the hazard for our citizens."

July 10, 1978

Opening remarks of Rep. Morris K. Udall, Chairman of the Subcommittee.

- p. 131: "Long-term control of tailings requires that mill companies make secure financial arrangements in the form of bonds or other surety....The approach of this legislation [H.R. 13382] puts the costs of mill tailings control for perpetuity squarely on the shoulders of the nuclear industry."

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that an adequate bond, surety, or other financial arrangement will be provided...by a licensee to permit the completion of all requirements...for the decontamination, decommissioning, and reclamation of sites...used in conjunction with byproduct material..."

2. Sec. 3. Remedial Action Performed by Secretary. There is no provision for NRC licensing or oversight of remedial actions carried out by DOE or the mill owner/operator as there is under Title I (remedial program) of UMTRCA.

3. Sec. 3(b). Standards. The Senate bill would permit the imposition of any standards adopted under UMTRCA, leaving open the potential for adoption of inadequate standards that do not protect public health or the environment, and which would allow excessively high residual risks. The House version, while specifically incorporating the standards "prescribed" by EPA and requirements "imposed" by NRC, does not take into account the significantly high risks permitted by the current EPA standards. Both bills permit agreement statement rules to take precedent, "if appropriate." It is difficult to understand why a publicly financed (i.e., federal) program should permit state regulatory involvement. On the other hand, the bills do not make clear an agreement state's role in the entire public financing scheme. And a simple consultation role for tribes (Sec. 3(b)(3)) may not be sufficient in light of the growing movement among large tribes to establish their own health and environmental standards.

4. Sec. 3(c). Consent. This section would permit an owner/operator to leave a pile unreclaimed and inactive indefinitely. No diligence provision is applied. At the least, a pile should be eligible for initiation of cleanup activities if it has been inactive for more than one year after the effective date of the law.

5. Sec. 3(e). Transfer of License. This section should provide for licensing and certification of reclamation by NRC as currently provided for under UMTRCA.

6. Sec. 5. Reimbursements. There is no provision for reimbursement of costs to states that perform remedial action.

7. Sec. 9(d). Federal Government Share. If there are approximately 200 million tons of tailings and only 56.1 million tons of AEC-generated tailings, that amounts to 28 percent, not 30 percent. This section also assumes that commingled tailings are present at all mill tailings sites; they are not. Only 13 of the 27 active mills have commingled tailings.

8. Sec. 9(e). Utility Share. The 55-percent share for utilities is totally arbitrary. Upon what information or studies is it based?

9. Sec. 9(f). Limitation of Financial Obligation. This section would relieve mill operators of any liability for spills, leaks, or other activities that cause or may cause contamination during the period of mill operations. Federal and state regulators would not be able to take enforcement action that requires expenditure of cleanup funds.

10. General. Both bills are absent any public participation requirements. At a minimum, public notice and hearings for all remedial plans should be mandatory and modeled after the requirements of Sec. 275.c.(1) of the Atomic Energy Act.



"...authority for States to regulate uranium milling and tailings control has been delegated in a muddy manner which in some instances has weakened the States ability to apply the kind of stringent requirements we now know to be necessary. This new act provides for States to regulate mill tailings within their jurisdiction to at least the same substantive standards required by the Commission for its licensees."

Testimony of Joseph Hendrie.

- p. 133: Legislation establishing NRC's licensing control over active uranium mill tailings sites should "...reinforce the Commission's authority to require secure financial arrangements insuring the proper decommissioning or radioactively contaminated sites, structures, and equipment, including decontamination, reclamation, and long-term care if necessary. Also, any legislation adopted should bring State regulation of uranium mill tailings under the Agreement State program set up by section 274 of the act. Agreement States should be required to regulate uranium mill tailings within their jurisdiction to at least the same substantive standards required by the Commission for its licensees."

Testimony of Helene Linker, project attorney, Natural Resources Defense Council.

- p. 142: "...section 4 of the bill [H.R. 13382]...explicitly authorizes the NRC to establish rules and regulations to insure funds will be available for the short- and long-term management of tailings piles. We agree with the NRC that the Commission already has authority to require such a financial arrangement but that a further express codification of that authority is appropriate."

A fee per pound of tailings generated should be imposed so that an adequate surety is obtained from all licensees, including many small companies which do not have the capital to post a large bond; explicit statutory authority for such a fee is needed.

Testimony of Michael Olguin, Director, State of New Mexico Washington Office.

- p. 154: "It would...seem desirable to make all States follow a mill tailings and waste regulatory disposal program at least as stringent as the requirements set by the Commission. In this way, minimum uniform standards will be imposed on all mill operators."

"Insuring adequate funding and requiring government ownership of land for new operations should help to insure the long-term integrity of disposal of these wastes."

July 17, 1978

Denise D. Fort, Esq., "Comments of Southwest Research and Information Center on H.R. 13382."

- p. 557: "Agreement states need the pressure of federal oversight to ensure adequate regulations, because of the susceptibility of state regulatory effects [sic] to the tremendous economic power of the uranium industry."
- p. 558: "The Congressional rationale for minimum federal air and water pollution standards was that states, by themselves, would not uniformly meet needed national standards. My experience in lobbying for increased state control over the uranium industry, in arguing for adoption of regulations implementing the state statutory authority and in litigating the uranium industry's nearly automatic court challenges to state regulation, convinces me that without an explicit statutory requirement, New Mexico's well-intentioned regulators will find it difficult to achieve standards as strict as the federal government's."

July 14, 1978

In written responses to questions posed by the Subcommittee Chairman, the State of New Mexico provided a copy of "Uranium Mill License Application Guidelines" used by the Radiation Protection Bureau of the New Mexico Environmental Improvement Division (then, "Environmental Improvement Agency") for all new mill license applications. Here are excerpts, as they appeared in the Hearing Transcript:

- p. 622. Appendix D-1 of the Guidelines incorporated U.S. Atomic Energy Commission Regulatory Guide 3.5, "Preparation of Environmental Reports for Uranium Mills." Section 9 of Reg. Guide 3.5 discussed "Reclamation and Restoration" and requested in-depth "plans for site reclamation and restoration including:...3. Financial arrangements to be made (such as bonding arrangements, etc.) to insure that adequate funds will be available for site reclamation and restoration when operations are concluded...."
- p. 630: Appendix D-2 of the Guidelines, titled "Environmental Report Guidelines," at Section 9 ("Reclamation and Restoration") provided that the "...financial arrangements should also consist of sufficient funds for any necessary long term monitoring, maintenance, and control of the inactive tailings piles."

"Uranium Mill Tailings Control." Hearings before the Subcommittee on Energy and Power of the Committee on Interstate and Foreign Commerce, House of Representatives, Ninety-Fifth Congress, Second Session, on H.R. 11698, H.R. 12229, H.R. 12938, H.R. 12535, H.R. 13029, and H.R. 13650; June 19, 20 and August 2, 1978; Serial No. 95-175.

June 20, 1978

Testimony of Joseph Hendrie.

- p. 216: The NRC had been working closely with the Environmental Protection Agency to upgrade licensed mills since 1976 and with the Department of Energy on criteria NRC had been using to "obtain decommissioning plans from uranium mills currently under license."
- p. 217: "The health effects of this radon production [from uranium mill tailings] are tiny as applied to any one generation, but the sum of these exposures can be made large by counting far into the future, large enough in fact to be the dominant radiation exposure from the nuclear fuel cycle."

"NRC Response to Questions in the Subcommittee's Letter of June 5, 1978."

- p. 221: "Through the provisions of NEPA and with recognition of the environmental and public health and safety aspects posed by mill tailings, the NRC is now requiring reclamation plans, with financial surety arrangements, at the time of the licensing of the mill."

Testimony of Victor Gilinsky, Member of the Nuclear Regulatory Commission.

- p. 226: The lack of attention paid by AEC to tailings hazards is now being corrected through NRC's licensing process and by preparation of an environmental impact statement on uranium milling requested by public interest groups.

Victor Gilinsky, NRC Commissioner. Speech to the Pacific Southwest Minerals and Energy Conference, Anaheim, California, May 2, 1978.

- p. 229: "NRC undertook in 1976 to upgrade tailings management at all existing NRC licensed mills. Commitments to control tailings at the end of mill life have been received from all uranium mills licensed by NRC and are being implemented in the form of license conditions. The basic objectives set by NRC are to reduce radon release to about twice the natural background level by isolating, or stabilizing, the tailings, and to do this in such a way that it is unlikely the tailings will be disturbed by natural forces in the future. We have required mill operators to set up a financial bonding arrangement to insure that stabilization is actually accomplished before the mill closes."

General Accounting Office, "Report to the Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce, on "Uranium Mill Tailings

## Cleanup: Federal Leadership at Last?"

- p. 256: GAO "...found that there is no requirement for and generally no effort being made today, with the exception of uranium mills, to provide for the cost of future decommissioning of privately owned nuclear facilities. The failure to make such a provision can result in the Federal and/or State Governments assuming responsibility that rightly belongs to private industry. The mill tailings situation is an example of the Federal Government having to bear the greatest cost to pay for the cleanup of facilities abandoned by industry."
- p. 258: "We [GAO] recommend that the Subcommittee...endorse the basic idea of having the Federal Government take the lead in cleaning up the uranium mill tailings at the inactive mill sites....The Congress should make clear that this is a unique situation, and establishes no precedent for the Federal Government assuming the financial responsibility of cleaning up other nuclear facilities and wastes."

Testimony of David G. Hawkins, Assistant Administrator for Air and Waste Management, Environmental Protection Agency.

- p. 294: "...maybe the quickest way to get...[inactive tailings] cleaned up is to recognize that there was a government-sponsored activity in the first place, Government-contracted, and to go ahead and get it cleaned up and have the Government take the responsibility for financing the activity. And I agree with...GAO, that this should not be regarded as a precedent for other activities in the nuclear fuel cycle."

Testimony of Monte Canfield, Director, Energy and Minerals Division, General Accounting Office.

- p. 295: "Should this legislation be enacted, we believe that it should be made abundantly clear in the legislation, or in the record that we are dealing with a unique situation and it should not be a precedent for the Federal Government to clean up other [nuclear waste] sites...."

Testimony of Sheldon Meyers, Director, Division of Fuel Cycle and Material Safety, Nuclear Regulatory Commission.

- p. 296: "...all the mills we have under license now have agreed to a remedial action program for stabilizing tails as well as providing financing to do it."

Testimony of James L. Liverman, Acting Assistant Secretary for Environment, Department of Energy.

- p. 296: The proposed legislation calling for Federal financing of the cleanup of inactive mill tailings sites can be called "compassionate liability on the part of the Government" and is different than sites formerly used by the Manhattan Engineering District which were owned by the Government and for which the Government may be "directly

responsible for cleanup."

Testimony of Joseph Hendrie.

- p. 304: "In the agreement States, we do cede to the States, under an agreement with the Commission,...our authority to license byproduct material."
- p. 305: "...I guess in the history of agreement States under the Atomic Energy Act, we have never found, that I know of, reason to revoke an agreement..."

Testimony of Sheldon Meyers.

- p. 305: "Some of the agreement States have gone along with the proposals we have made to stabilize the tailings, [and] provide financial surety for new mills..."

Department of Energy. "Questions by Subcommittee and Department of Energy Responses."

- p. 334: In Question 8, the Subcommittee noted that Union Carbide Corp. had furnished the staff a copy of an 1966 interagency agreement concerning uranium mill tailings that "clearly states that 'the responsibility' for these piles rests with the 'individual mill owners.'"
- p. 335: DOE's response stated that that the interagency agreement was "consistent with the AEC's attitude toward mill tailings in 1966..." which was that they did not constitute a health and safety problem, but were more of a nuisance than anything else. "Studies of radiation exposures in the vicinity of tailings piles up to 1966 were largely concerned with stream pollution, and with particulate matter blown from tailings piles being an inhalation matter," DOE stated further. "It was largely to control these exposure pathways that AEC, HEW and DOE [sic: it was the Department of Interior's Federal Water Pollution Control Administration] offered to provide advice and assistance under the agreement signed in 1966."

August 2, 1978

Testimony of Joseph Hendrie.

- p. 341: Environmental and safety concerns, proper disposal of uranium mill tailings, and "...the provision of some kind of surety to assure the completion of reclamation and stabilization work prior to termination of the source material license" were handled by NRC through its authority to license source material under the AEA of 1954.

Nuclear Regulatory Commission. "Supplemental Submission of the United States Nuclear Regulatory Commission -- Mill Tailings Legislation."

- p. 356- 357: The new proposed new AEA section 161(x) "...is intended to add specific and clear NRC authority to require financial arrangements to ensure the proper decommissioning, decontamination, reclamation and long-term care...of sites, structures, and equipment used in connection with uranium mill tailings....This amendment would also provide a clear legal basis for establishing funds for long-term care of tailings disposal sites."

Testimony of William D. Rowe, Deputy Assistant Administrator for Radiation Programs, EPA.

- p. 365: The Resource Conservation and Recovery Act of 1976 requires "financial bonding to assure that all of these requirements [i.e., safe transportation, storage, and disposal of hazardous wastes] will be satisfied."

"Agreement: Joint Federal Agency Position Regarding Control of Uranium Mill Tailings," signed in 1966 by representatives of the Atomic Energy Commission, Federal Water Pollution Control Administration of the Department of Interior, and the Public Health Service of the Department of Health, Education and Welfare.

- p. 369: FWPCA, PHS, and AEC "...agree that inactive tailings piles resulting from uranium milling operations should be structurally stabilized and contained to prevent water and wind erosion....Planning, management, stabilization and containment of tailings piles are viewed as being the responsibility of the individual mill owners. Mill owners should develop, without undue delay, specific plans for accomplishing such management, stabilization and containment, and submit such plans through the appropriate state regulatory agencies for approval." Obtaining and enforcing such plans would be left to the States.

Colorado Department of Health. "Radiation Regulation No. 2 -- Requiring Stabilization of Uranium and Thorium Mill Tailings Piles," effective January 26, 1967.

- p. 376- 378: The regulation required all inactive uranium mill tailings piles and ponds to be dewatered, graded and covered to minimize blowing of dust, water erosion, and escape of tailings to nearby watercourses, and established procedures for reduction of radiation doses to the public from such tailings, approval by the Department of stabilization plans, and notice to the Department of the sale of properties on which tailings were located.

Testimony of Joseph Hendrie.

- p. 408: When asked by the Subcommittee counsel [David Finnegan] what he meant by the term "funds," Chairman Hendrie said he meant monies in the form of a bond for carrying out reclamation.

"Mr. Finnegan: And I assume you mean an adequate bond to cover the cost of cleanup of these tailings at the termination of the

license?..."

"Mr. Hendrie: ...That is the purpose."

Testimony of Leland Rouse, Chief, Fuel Processing and Fabrication Branch, NRC.

p. 406: The estimates of the cost of reclamation of the active sites under NRC source material licenses at the time ranged from \$2 million to \$10 million.

"Mr. Finnegan: ...and you would have to have bonds for that type of figure?"

"Mr. Rouse: Yes."

Nuclear Regulatory Commission. "Bond Premiums for Reclamation of Uranium Milltailings."

p. 409: The annual premiums for uranium mill bonds required by NRC was 0.5 percent to 3 percent of the amount of the bond. The document said the premiums were dependent on the financial condition of the licensee. One mill paid a premium of \$6,600 per year per million dollars of bonding surety. Another licensee's premium was \$14,500 for a \$3.9-million bond covering both mine and mill reclamation.

Nuclear Regulatory Commission. "Assessment of Environmental Impacts of Uranium Mills in Agreement States -- Technical Assistance for Agreement States to Conduct Environmental Assessments," 43 Federal Register No. 81, April 26, 1978.

p. 412 "...we believe that a documented environmental assessment prepared for each major mill licensing action in Agreement States would be helpful in exploring the issues and alternative courses of action available on each case."

p. 413: "States would be urged to enact licensing fees schedules that are similar to NRC's."

p. 414: The Natural Resources Defense Council petition for rulemaking in May 1975 (40 FR 20983) asked for "a performance bond of uranium mill licensees for the stabilization of tailings piles," and a generic environmental impact statement on uranium milling.

p. 415: "The Commission...deferred until completion of the final GEIS the question of requiring bonding of licensees for the care of tailings piles."

Testimony of Joseph Hendrie.

p. 417: Chairman Hendrie said in response to a question from Chairman Dingell that the risk of having different and divergent requirements in agreement States "is clearly quite possible" if the States are not required, as the NRC is, to prepare an environmental impact

statement (or, at the minimum, an environmental review document similar to an EIS) for all mill licensing actions.

Testimony of David Berick, Environmental Policy Center.

- p. 429: "The precedent of excusing corporations from responsibility for environmental damages and hazards in the remedial legislation is unacceptable..."

#### CONGRESSIONAL RECORD CITATIONS

Congressional Record, October 3, 1978, p. 33262.

Remarks of Rep. Udall: "Title II of H.R. 13560 [the Uranium Mill Tailings Radiation Control Act of 1978] clarifies the authority of the Nuclear Regulatory Commission to regulate the active disposal of uranium mill tailings and to apply minimum national standards to the uranium milling industry."

"H.R. 13560 does not suggest that Federal relief could be provided for any other uranium tailings problems which are under active license."

Congressional Record, October 3, 1978, p. 33263.

Remarks of Rep. Lagomarsino: "It is my understanding that title II of this bill will clarify the authority of the Nuclear Regulatory Commission to regulate the uranium mill process and disposal of mill tailings, and that States authorized to license uranium milling through agreements with NRC will be required to adopt control standards equal to or exceeding the Federal standards. I think this is an important feature of the bill which will close a loophole in existing law."

Remarks of Rep. Marriott: "My main concern all along has been that we develop a program that will clean up the sites and assure that we do not have the same problem at some later date. H.R. 13560 establishes a cleanup program, assures participation by the States, and gives NRC authority to see that it does not happen again."

Congressional Record, October 13, 1978, p. 36695.

Remarks of Sen. Hansen: "Many members of the [Senate Energy and Natural Resources Committee] felt very strongly that there is an element of artificiality limiting Federal assistance only to remedial action for mill tailings located at inactive sites while placing a full financial burden on operators of active sites to complete remedial actions for those tailings which also result from nuclear weapons programs."



Congressional Record, October 13, 1978, p. 36696.

Remarks of Sen. Hart: "...the total effect of this amendment is to correct past mistakes and to provide assurance that these costly mistakes will not be repeated in the future."

Congressional Record, October 13, 1978, p. 36697.

Remarks of Sen. Randolph: "I am concerned that in mandating the Commission to control mill tailings disposal through its permitting powers, we achieve at least the degree of control which would result under subtitle 'C' of the Solid Waste Disposal Act. Uranium mill tailings certainly are a hazardous waste under that subtitle,...for their radioactive and nonradioactive characteristics. While it may be preferable to integrate regulation of such wastes with the permitting of other aspects of the fuel cycle such as the ore processing, the environmental protections of subtitle 'C' must not be lost or reduced."

Congressional Record, October 14, 1978, p. 38229.

Remarks of Rep. Dingell: "The House...sought to make it clear that mills located in agreement States would be treated no differently than those located in other States where NRC is the regulator. For competition reasons alone, we believed that this approach was sought."

#### COMMITTEE REPORT CITATIONS

Report of the Committee on Interior and Insular Affairs of the House of Representatives on the Uranium Mill Tailings Control Act of 1978, Report No. 95-1480, Part I, August 11, 1978.

- p. 16: "The Commission's standards and requirements should...specify, for example, ...institutional arrangements such as financial surety requirements or site security measures."
- p. 20: "Section 203 authorizes the Commission to require secure financial arrangements from licensees for mill tailings stabilization and, if necessary, for long-term care costs. Such financial arrangements may be in the form of bonds, sureties, fees or other collateral to insure that flexibility may be exercised in requirements to prevent unnecessary hardship for firms of differing size or financial background."
- "Subparagraph (2) [of Section 203] requires that, in any case where long-term maintenance and monitoring is determined to be necessary by the Commission, the appropriate licensee will pay such costs. The Commission is required to have obtained any such funds from the licensee prior to termination of the license."

Report of the Committee on Interstate and Foreign Commerce of the House of Representatives on the Uranium Mill Tailings Radiation Control Act of 1978, Report No. 95-1480, Part 2, Sept. 30, 1978.

- p. 29-30: "In authorizing a remedial action program, the committee does not recognize any Federal responsibility or liability for these tailings. The committee realizes that they were largely derived from milling operations conducted under Federal contract. However, that is not the compelling reason for recommending a remedial action program. The significant factor is the lack of adequate authority under the Atomic Energy Act of 1954 to regulate these tailings."
- p. 30: The lack of control over the inactive sites "...does not exist at the active mill tailings sites. Those sites, even those with tailings derived from Federal contracts, are subject to NRC regulations as a result of the enactment of NEPA in 1970."
- "...the committee also stresses that it does not consider this bill a precedent to be followed in the case of other waste management practices....The situation at these inactive sites is quite unique in that there was once Federal licensing of the operations, but, due to a loophole in the law, the sites escaped control after operations ceased."
- p. 44: New section 161(x) was added to the AEA of 1954 to authorize the Commission to establish "...financial arrangements which must be made by licensees for the cost of stabilization and, if necessary, the long-term cost of maintenance and monitoring. Such arrangements must be made before a license is terminated, and may be by bond, surety, or other means..."

ATTACHMENT 1

# Uranium tailings cleanup could cost over \$1 billion



EDITOR'S NOTE: This is the second of a three-part series.

By David Carlson  
Eastern Bureau

Uranium mill tailings and other nuclear wastes are not the kind of thing that man can really "clean up."

It would be nice, especially since there are millions of tons of them already piled up in America's backyard, if there were a cheap, easy method of extracting the radioactivity from mill tailings and leaving a pile of harmless sand for future generations to play in.

However, it's not that easy, or that inexpensive.

Despite all of man's countless technological advances, there is no cost-effective method of making tailings or other nuclear wastes harmless. In fact, there is no method at any cost.

Just ask the U.S. Department of Energy. Experts there have been working on the problem for eight years, and the best answer they have come up with for disposal of tailings and other nuclear wastes is to bury them, just as we do the rest of our garbage, in giant landfills.

In the case of tailings, the Department of Energy's "preferred method of disposal" is to place over them layers of dirt and rocks that total 8.5 feet in thickness. Thus, the department says, will "stabilize" the tailings, stopping the emission of deadly radon gas and containing harmful radiation for at least 1,000 years.

Few would question that burial is a reasonably "easy" method of tailings disposal. It is, however, not cheap and not perfect.

The imperfection is obvious. Since the tailings still are radioactive, they still are dangerous. The underground water supply must be protected from seepage, the piles must be fenced to keep out animals and people still must be warned to stay away in order to protect their health.

The lack of perfection, though, is, at least for the short term, not as frightening as the cost.

The Energy Department, charged by Congress with cleaning up the tailings at 22 sites around the nation where companies mined uranium in the early 1950s for the Atomic Energy Commission, has found the job incredibly expensive.

When given the task by Congress in 1978, the department first estimated it would cost \$2.75 a ton to protect mankind from the tailings.

Not long afterward, it revised the estimate to \$1 billion — or about \$6 a ton — to bury the 171 million tons of uranium mill tailings then piled up at existing sites around the nation. After seven years of experience, even that estimate has proven very conservative.

The cost at sites the Department of Energy has dealt with so far has been astronomical — as high as \$77 for every ton of tailings. In fact, only one site has been cleaned up for \$6 or less per ton. That was Maybell, Colo., where the work cost only \$4.48 a ton.

Even including Maybell, however, the nationwide average for the tailings stabilization program is \$17.30 a ton, says John Themelis, director of the department's Uranium Mill Tailings Remedial Action Project.

Even Themelis, a staunch defen-

der of the Department of Energy and its tailings program, says it may cost a billion dollars just to clean up New Mexico's 86 million tons of known radioactive tailings. The cost depends a great deal, however, on how soon the work is done, Themelis says.

"In New Mexico," he says, "you may have some economy of scale. It may cost less in New Mexico than in most other states because there are large quantities in a few places instead of small quantities in many places."

"You might be doing it for \$10 (a ton) in New Mexico, when it would be \$20 or \$25 in some other places." Of course, he adds, the cost of tailings stabilization will rise with inflation, making the projects more expensive as time goes on.

Even if Themelis' \$10-a-ton estimate holds true, it will cost \$850 million in today's dollars to clean up the radioactive uranium mill tailings in New Mexico.

Those not affiliated with the energy department, however, say it is doubtful that even in The Land of Enchantment, where most of the tailings are in unpopulated areas, the work can be done for an average of \$10 a ton.

"We've been saying for a long time that the estimates are way too low," says Southwest Research and Information Center's Chris Shuey.

"On a national scale, we estimate there are now about 250 million tons of tailings. Some people are saying try \$2 billion (for a stabilization estimate), and we're saying try even higher than that."

"The point is that the national average of \$17.30 a ton shows that the DOE's per-ton estimate is way too low. We've been saying it may cost about \$10 a ton in New Mexico, but even that sounds way too conservative given what we know now."

"I wouldn't be surprised at all if it costs a billion dollars, or even more."

**TOMORROW:** A look at two New Mexico sites where stabilization work is under way.

Albuquerque Journal, April 13, 1985, p. A-1

## Taxpayers Could Get Stuck With \$300 Million Tailings Bill

By Nolan Hester

JOURNAL STAFF WRITER

**SANTA FE** — State taxpayers could get stuck with an estimated \$300 million bill to clean up New Mexico's uranium mill tailings unless reclamation rules are tightened to put more responsibility on the uranium industry.

Denise Fort, director of the state Environmental Improvement Division, delivered that warning Friday over the costs of the uranium industry.

Asking the state Environmental Improvement Board for its support, Ms. Fort said her staff plans to spend the next nine months revising tailing regulations. The board will be asked to adopt the stiffer rules next spring.

The uranium industry contends that current rules are adequate, and that the revision would unnecessarily increase clean-up costs.

"It would be a major economic impact on an industry that is nearly dead," said Edward Kennedy, Homestake Mining's environmental affairs director.

One major change would require uranium firms to post cash bonds to pay for burying the state's 40 million tons of radioactive tailings, most of which lie near Grants. Under existing rules, uranium firms can carry their own insurance to pay for reclamation.

Tailings are sand-like residues left as waste from uranium mining. Since milling extracts only 0.2 percent of the uranium, the tailings remain radioactive for several hundred years.

Ms. Fort said most firms' self-

insurance is good for just \$2 million to \$3 million per tailings pile — even though new federal rules mean it could cost \$20 million to \$80 million to make each pile safe.

"They're far short of what will be required," said Ms. Fort of existing self-insurance. "If the companies aren't around, it could well fall on the taxpayers."

The \$300 million cleanup estimate was computed by the state Environmental Improvement Division. If private companies cannot pay the full cost, Ms. Fort said the state would be responsible for cleanup. The federal "superfund" environmental cleanup program does not apply to mine tailings.

Homestake's Kennedy argued that the state's existing rules are adequate and that accepting the new rules — modeled after the Environmental Protection Agency's new federal reclamation rules — would unnecessarily boost reclamation costs.

"We believe the state already has the best set of regs in the nation," Kennedy said.

Kennedy cautioned the board to go slowly. The uranium industry has filed suit in U.S. District Court in Denver to overturn the Environmental Protection Agency regulations, arguing that the agency has exceeded its authority.

Since the court challenge could take years to resolve, Ms. Fort said the state must move forward. State officials want to ensure that residents are not exposed to dangerous levels of radon gas escaping from the piles, or uranium in the piles themselves.

With any revival of the uranium industry at least 10 to 15 years away, she added that a tailings solution must be found before mining firms go bankrupt.

"We don't have all the time in the world," she said. "I feel a certain sense of urgency about resolving it."

Tightening the bond requirements is just one of 20 changes in uranium mill and mine control rules suggested by a special committee appointed by Gov. Toney Anaya. The group, chaired by University of New Mexico professor Jan Sorenson, spent almost 18 months reviewing the rules. Its report was made public Friday.

"We don't think they will impose any undue hardship on industry," said Sorenson, adding that they will improve protection of the public.

Other key changes proposed include:

- Requiring that existing tailing piles covered with dirt be stable for at least 200 years and new piles for 1,000 years.

- Strengthening the state's power to protect ground water supplies contaminated by tailing piles. Existing rules limit the state's authority to ground water outside a firm's property — even if a tailing pile is seeping.

- Expanding state regulations to cover uranium mining. The state now controls only tailings.

85-021



## EID NEWS

NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD

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### CONTACT:

SANTA FE, NEW MEXICO -- A report submitted to Governor Andy Anaya recommends the state address inadequacies in its radiation protection regulations to provide better health protection and environmental quality in New Mexico.

The report was commissioned by Governor Anaya who appointed a five member group with expertise in radiation protection in 1983 to evaluate the state's radiation protection regulations. The working group submitted its final recommendations to the Governor in February.

State Environmental Improvement Division Director Denise Fort agreed in a review of the report that changes are necessary and EID will present proposed regulations to the Environmental Improvement Board in the near future, she stated.

Fort said a number of issues identified in the report are related to a need to strengthen regulations for uranium mills and mill tailings waste disposal. This would include stabilization of the mill tailings, the location of new disposal sites for tailings, and developing state regulations to minimize the impact of mill tailings on ground water at existing sites.

"Our highest priority in radiation in upcoming months will be to propose amendments to existing regulations which will primarily address concerns related to uranium mill licensing and mill tailings disposal," Fort said. "The environmental problems of uranium mill tailings remain, although the industry is not as active," she noted.

Further consideration also will be given toward expanding regulations to include mining activities, a recommendation made in the working group report. Another recommendation is that the state examine the possibility of acquiring lands that have been contaminated extensively from uranium mining and milling activities. Stronger emergency powers and adequate financial surety arrangements for the tailings sites are among issues raised in the report which EID also will address, after first focusing on issues related to uranium mills and tailings disposal, Fort noted.

"We will work with the uranium industry and interested citizens to develop an approach that provides effective environmental protection, yet considers the economic condition of the industry," Fort stated. "It is unfortunate that these regulations were not adopted when the industry was in better health."

EID estimates there are about 80 million tons of radioactive tailings at the five licensed uranium mills in New Mexico, and the cost of clean up for the sites is estimated about \$300 million.

Fort pointed out that Governor Anaya recently supported proposed federal legislation to help fund the clean up of uranium mill tailings with federal funding and funds from users of electricity generated by nuclear power.

ATTACHMENT 11

"Passage of legislation to pay for mill tailings' reclamation in the state will be a positive environmental solution to potential health risks posed by radioactive mill tailings as well as an economic benefit to the state," Fort stated.

Fort said the working group report provided a thorough review of the state's radiation protection regulations and raised important issues that need to be considered in dealing with the problem of uranium mill and mining activity in New Mexico.

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February 15, 1985

The Honorable Toney Anaya  
Governor, State of New Mexico  
New Mexico State Capitol  
Santa Fe, New Mexico

Dear Governor Anaya:

Based upon discussions with the Environmental Improvement Division, the Working Group on New Mexico's Radiation Protection Regulations has modified the report previously submitted to you on August 22, 1984. Discussions with the EID has been suggested both by yourself and members of the Working Group. The modifications have been made to clarify the recommendations of the Working Group; no major or substantive revisions have been made. This report represents the final product of the Working Group on New Mexico's Radiation Protection Regulations. The report gives our findings, recommendations and, in condensed form, the reasons for our conclusions.

We have identified 20 issues regarding the present regulations and their enabling legislation which should be addressed by the Environmental Improvement Board, the Radiation Technical Advisory Council, the State Quality Control Commission or submitted to the Legislature as amendments to the Radiation Protection Act. The more significant issues identified include 1) the need for expanded regulation of uranium mining and related activities by the State's Radiation Protection Regulations, 2) the strengthening of ground water quality regulations pertaining to radioactive waste disposal sites, 3) the need to assure adequate financial surety arrangements for tailings reclamation, 4) the establishment of improved stabilization criteria for uranium mill tailings waste retention systems, 5) the need for a stronger cease and desist authority for the Environmental Improvement Division, and 6) a recommendation to examine the concept of perpetual control by the State for lands extensively contaminated as a result of uranium mining and milling activities.

The recommendations of the Working Group, if carried out, would fill significant gaps and strengthen inadequacies in the regulations to provide better protection of human health and environmental quality. We believe these revisions and proposals are practical, reasonable, and technically justified, yet will not result in unnecessarily costly requirements of industry to assure environmental protection.

The Honorable Torrey Amodeo  
February 15, 1985  
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Members of the Working Group, whose expertise includes radiation protection, risk assessment, contaminant transport and fate, and tailings management, arrived at a consensus for each issue discussed in this document. All issues were examined in light of the scientific expertise of each member of the Working Group and of the overall philosophy of the report. Several organizations also contributed to our understanding by presenting their viewpoints and opinions on the regulations.

Insofar as possible, the Group has taken account of recent results of study and research by State and Federal agencies.

Sincerely,

*Thomas Buhl*  
Thomas Buhl

*David H. Duggan*  
David H. Duggan

*Jay Sorenson*  
Jay Sorenson

*John Rodgers*  
John Rodgers  
*Marvin Wilkening*  
Marvin Wilkening

TB/JH/00/-S/RH/cvg

Recommendations and Statement of Reasons

For Change 1: New Mexico Radiation Protection Regulations

and Their Enabling Legislation

Working Group on New Mexico's

Radiation Protection Regulations

February 18, 1985

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## Issue #1: Strengthened Enforcement and Emergency Powers

### Amendment of Radiation Protection Act (RPA) 1-11B and 74-1-13 Proposed Radiation Protection Regulation 1-11F

The Radiation Protection Act provides the Director with enforcement powers, including the emergency power to limit sources of radiation which fail to comply with the provisions of the Radiation Protection Act (RPA) 1-11B and 1-13. The Act also states that the Director may issue a cease and desist order "on an emergency basis... if he determines that immediate action is required to protect human health and safety" (74-1-11B and 1-13).

#### Recommendation

The Environmental Improvement Board (EIB) should hold hearings to include a new section 1-11F which would strengthen the authority of the Division in accordance with the Radiation Protection Act to issue cease and desist orders for waste retention systems. The consequence of such orders would generally be the cessation of use of an existing pile and the construction and use of a new disposal site, but in the extreme case the Division could require the movement of tailings to a new disposal site. The EIB should ensure that such powers are administered under due process of the law including public hearings, review by the Director, etc.

The EIB should clarify the meaning of emergency and enforcement powers and any existing differences between the statutes and regulations in order to clarify the authority of the Director. In particular, it is necessary that the Division have clear enforcement and emergency powers which can be implemented to prevent failures or non-compliance consequences capable of posing severe hazards to health and the environment. These powers should include the right to enter the premises during emergency situations.

#### Reasons

The Radiation Protection Regulations should clear up ambiguities and explicitly clarify enforcement and emergency power of the Division in accordance with the provisions of the Radiation Protection Act. The Working Group feels that this authority will assure that, in the future, inadequately performing disposal sites will not be allowed to continue operation. Such authority will also provide the impetus to employ latest-of-the-art tailings management technology at sites where existing tailings disposal systems may have been inadequately sited and/or operated in the past.

Present authority given to the Division under the Radiation Protection Act may not be sufficient in some cases for the Division to perform its duties in a clear and reasonable way or in the event of a serious accident. For example, it is not clear whether the Division can "impound" a site where a serious threat to the public or the environment exists in order to prevent a failure or to perform necessary remedial action.



Issue #2: State Reservations to Control Use of Lands with Widespread Contamination

Amendment to the Radiation Protection Act and New Radiation Protection Regulation

Recommendation

The Working Group suggests that the EIB examine the concept of perpetual control of lands with levels of radioactive contamination unacceptable for unrestricted areas and with such extensive contamination to preclude cleanup and stabilization. The State should control all activities in such reservations including habitation, farming, grazing, industrial development, mining and milling, and other types of waste disposal to minimize exposure to off-site individuals and workers within the reservation. The State would have the authority to restrict any activity which might increase the spread of contamination and which would expose workers to unacceptable radiation levels. The Working Group encourages the use of such reservations for other hazardous and radioactive waste disposal operations if site characteristics are suitable.

The Working Group recommends that the State legislature be requested to fund a study group to examine this issue.

Reasons

Clean up of contaminated lands is the best method of assuring protection against radiological hazards and it would be desirable if all uranium mine and mill operators decontaminated all lands which they contaminated. However, if resources (federal, state, and private) are not available to accomplish such a complete clean-up, then other means of protection must be implemented.

The Working Group believes that past mining and milling operations have left areas of widespread contamination (e.g. abandoned uranium mines near Ambrosia Lake). The financial resources for the cleanup of such extensive contamination cannot be readily identified. The only reasonable solution may be State control of these lands to restrict use of these lands for any activity which 1) would result in unacceptable exposure to the off-site public or on-site workers or 2) would increase the likelihood of the further spread of the contamination. Under State control, land management practices could be employed to decrease the likelihood of contaminant migration (e.g. prohibit grading to limit erosion potential, revegetate disturbed areas, and construct sediment control dams to reduce off-site migration of contaminants). These land use restrictions should be used in addition to, but not as a substitute for, as extensive a clean-up and reclamation of these regions as possible, considering the financial constraints at the time the decontamination is initiated.

Issue #3: Transfer of Title to Interests in Disposal Sites

Amendment of Radiation Protection Act and Review of Radiation Protection Regulation 3.300.J.

This section of the regulations describes the provisions and the requirements for the transfer of land or other interests for tailings disposal sites to the State or the Federal government at the termination of a license.

Recommendations

1. The Working Group recommends that the requirements in 3.300.J.3. be revised so that the applicant is required to show transferability of interest in land under which tailings disposal will take place (i.e. underground mine backfill disposal) unless the applicant can show that no hazard to the public will occur if such land transfer does not occur.
2. The Working Group cannot identify any tailings sites whose transfer should be left to the discretion of the Director (i.e. the balancing test of 3.300.J.8.). Transfer of interests in existing sites might require the authority for "condemnation" which would probably require a change in the Radiation Protection Act or other applicable legislation.
3. The Working Group recommends that the requirements in 3.300.J. be re-examined in light of changing federal requirements.

Reasons

Although the legal aspects of the transfer of land title or other interests are beyond the expertise of the Working Group, we feel the EIB should examine this issue particularly with respect to the recommendations stated above. The title to the land has very important implications not only to the "continued care requirements" but also to the possibility of inclusion in a state "reservation" (described in the previous section).

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Issue #4: Exemptions and Exceptions from Radiation Protection Requirements

Review of Radiation Protection Regulation 1-110.A

The present regulation 1-110.A provides that the Division may make exemptions to requirements of the regulations which are determined to be authorized by law and which will not result in undue hazard.

Recommendation

The Working Group suggests that the EIB examine this regulation to determine whether this opportunity for broad-based exemption is contrary to a radiation protection system based on explicit regulations. It suggests, as well, that citizens be given standing to present appeals to the Board, and that provisions for public notice and the possibility for public hearing should be considered for ensuring public accountability.

Reasons

The Working Group is concerned that such a broad exemption authority might be abused in the future to the detriment of the intent of the Radiation Protection Act. Measures should be undertaken that would afford protection for the Director, the Agency, and the public.

Issue #5: Inclusion of Uranium Mining and Related Activities under the Radiation Protection Regulations

Revision of Radiation Protection Regulation 1-110.C. and 3-110.B.

Part 1-110.C. of the Radiation Protection Regulations and the Radiation Protection Act exempt from State regulations those aspects of the mining, extracting, processing, storage or transportation of radioactive ores or uranium concentrate that are regulated by federal or other State agencies unless the authority for regulation is ceded by the appropriate federal or State agency to the EIB. The regulation of uranium milling operations has been ceded by the U. S. Nuclear Regulatory Commission (NRC) to the State under Agreement State Status. Occupational health programs in uranium mines are presently regulated by the U. S. Mine Safety and Health Administration, but impacts to the public health and environment presently are not regulated by any agency.

Recommendations

The EIB should open hearings on the inclusion of uranium mining related activities in the State regulations in order to regulate 1) cleanup and reclamation of low grade ore piles, spoils, and other mining wastes, 2) the dispersal of radioactive material resulting from the transportation of ores in unrestricted areas, and 3) the discharge of all effluents resulting from the mining operations not presently covered by State and federal regulations, and 4) the release of surplus material to the public domain.

Reasons

If mining and related activities are brought under the regulation of the Division, then all major sources of exposure to radioactivity from the uranium fuel cycle which are not presently adequately controlled will be under the same regulatory authority. Other states are presently regulating uranium mining activities showing that such a radiation protection program is feasible and practicable.

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technologies might not only provide protection of ground water but also may provide sufficient control of contaminants to allow a non-degradation standard of ground water quality to be feasible.

- 2) In order to be compatible with accepted radiation protection goals, the 10 pCi/l limit for radium-226 in the WQCC ground water quality regulations should be evaluated in relation to doses to the public and to practicable control capability. In the Radiation Protection Regulations, the 10 pCi/l limit is a maximum above background concentration of radium-226 in effluents to unrestricted areas. This limit is reduced to 10 pCi/l if a suitable sample of the population is exposed. In addition, there is an overall requirement to keep releases to unrestricted areas as low as reasonably achievable. These features of the radiation standards are not present in the WQCC regulations.
- 3) Unacceptable dose commitments may result from the chronic ingestion of water containing 5 mg/l of uranium; therefore, a more restrictive human health standard in the WQCC regulations may be required. Allowing potentially usable ground water to be contaminated with up to 1.0 mg/l molybdenum could result in toxicity to domestic livestock either through direct ingestion or excessive molybdenum in forage plants irrigated with contaminated water.
- 4) Because of the numerous pollutants including organic chemicals present in tailings solutions, adequate regulation of these pollutants in the WQCC requirements should be examined.

#### Issue #6: Siting Criteria and Flood Protection

Revision of Radiation Protection Regulation 3.300.8.1.4.

The present regulation requires the license applicant to select among alternative tailings disposal sites or to judge the adequacy of an existing site by evaluating specific site criteria. The environmental report required of all license applicants under 3.300.8.1, includes such an analysis to identify a site which will provide long term isolation of the tailings and associated pollutants.

#### Recommendation

The Working Group recommends consultation and coordination with the State Engineer's Office so that 3.300.8.1.4. be revised by the EIR to conform with the changes in the following proposed regulation:

- d. Engineered and Natural site characteristics and engineered flood protection measures shall be such that the site is so well protected from flood damage that any transport of radionuclides and associated pollutants and the exposure to the public resulting from isolation measures to the public ~~is minimal and other pollutants, as a result of damage from a flood of such magnitude that is not deemed to occur but once in one hundred years. Probable maximum floods, shall not result in effluent releases that exceed the regulation protection requirements~~ is minimal and other pollutants, as a result of damage from a flood of such magnitude that is not deemed to occur but once in one hundred years. Probable maximum floods, shall not result in effluent releases that exceed the regulation protection requirements as provided in Part 4 and Part 12; and the provisions of Part 3 of the Water Quality Control Commission Regulations governing ground water contamination.

The Working Group also recommends that the EIR evaluate the need for regulations to prevent contamination in surface water, air, and soil by non-radioactive materials dispersed by flood events.

#### Reasons

- 1) The proposed change in wording to "engineered flood protection measures" clarifies that both natural site characteristics (e.g., location relative to stream channels) and engineering measures (e.g., riprap, diversion channels) in concert will provide flood protection.
- 2) As stated in R.1., "associated pollutants" including radionuclides and toxic trace elements are present in tailings. Thus the public should be protected from both radionuclides and toxic elements dispersed by flood damage.

In denoting changes in the regulations, we have indicated ~~deleted~~ material by striking it out, and new material by underlining it.

... regulations provide protection for the public against a 100 year flood which disperses radioactive materials. The State Engineers Office has the authority to assure that all dams in the State (including tailings retention dams) are constructed to prevent a catastrophic level of damage (i.e. loss of life and/or severe property damages) in the event of a Probable Maximum Flood. Because the probability of a failure of a tailings structure designed for protection against a 100 year flood event during any given 100 years is unacceptably high, it is recommended that the likelihood of such a failure be significantly reduced by requiring protection against a Probable Maximum Flood. In addition to protection against these severe failures, the occurrence of a less than catastrophic failure which could require a complex and costly cleanup (as an example the United Nuclear Churchrock dam failure and the resulting spill) will have a much lower probability.

- 4) It is recommended that the EIS change the "standards" to "requirements" because the Working Group wants to assure that the ALARA (as low as is reasonably achievable) provisions of Part 4 should also be applicable to these radiation exposures. ALARA provisions are not numerical standards but are goals based on the state of technology and cost/benefit analysis.
- 5) The only identified regulation related to the associated pollutants (i.e. non-radioactive substances) dispersed as a result of flood damage is Part 2 of the HCC Regulations (Discharge onto or below the Surface of the Ground). In addition to ground water impacts, the non-radioactive substances in flood dispersed tailings could degrade surface water quality and air quality, and also contaminate soils; no state regulations were identified which would pertain to impacts on surface water, air, and soils.

#### Issue #9: Alternative Tailings Management Methods

Revision of Radiation Protection Regulation 3-300.R.2.d.

The present regulation 3-300.R.2. states that the license applicant submit an environmental report which analyzes the engineering and economic feasibility, and the health, safety, and environmental benefits of alternative tailings management methods.

#### Recommendations

The Working Group recommends the following changes in 3-300.R.2.d.:

- d. any other method proposed by the applicant or by the Division.

#### Actions

The Working Group believes the Division should have the authority to ask an applicant to analyze any tailings management technology which might be practicable and yield health or environmental benefits. The applicant should not be sole selector of methods to be evaluated.

Issue #10: Dose from Discharge of Radioactive Material

Revision of Radiation Protection Regulation 3-300.M and Part 4, Appendix A.

The present regulation limits the dose to the public from planned discharges of radioactive materials from source material processing facilities. Uranium mill tailings are excluded as a source of exposure.

Recommendations

The Working Group recommends the EIR hold hearings on dose limits to the public to include the following revisions of 3-300.M:

- H. All operations of facilities processing source material shall be conducted operated by the licensee in such a manner as to provide reasonable assurance that the annual 50 year dose equivalent commitment per year of exposure does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public in excess of natural background as a result of exposures to planned routine discharges of radioactive material to the general environment. All tailings-source Radon and its short-lived daughters are exempt from the provisions of 3-300.M.

In addition, the Working Group suggests the Footnote 3 in Appendix A (Concentrations in Air and Water Above Natural Background) be revised to include a statement similar to the following:

Substitution of the Working Level value for an ambient radon-222 concentration is acceptable when the working level is determined at a location representative of human exposure. In particular, indoor measurements would be preferable because of higher human occupancy.

Reasons

- 1) The 50 year dose commitment methodology is the recommended practice of the International Commission of Radiological Protection (ICRP Publication No. 26). In addition, this methodology simplifies the implementation of the regulation versus the original annual dose calculation. The use of dose commitment strengthens the regulation by including the dose from radionuclides retained in the body for periods greater than a year.
- 2) The deletion of the adjective "reasonable" is suggested because the rationality of "assurance" is undertaken and inclusion of "reasonable" would only lead to ambiguity and complicate the interpretation of the regulation.

- 3) Some discharges from processing facilities are "routine" but not "planned", for example, dust which is blowing off a tailings pile. The Working Group proposes this change to include such discharges.
- 4) Mill tailings sources of particulate emissions should be included in 3-300.M because they are an important source of exposure and it is technically practical to include these sources.
- 5) The inclusion of long-lived daughters of radon-222, the radionuclides lead-210 and polonium-210, which are present in tailings and other wastes and which could contribute appreciable dose to the public is justified by the cost/benefit analysis performed by the U. S. Environmental Protection Agency (EPA). Therefore, only the short-lived daughters of radon-222 should be excluded from this regulation. Part 4 of the existing regulations established a radon-222 air concentration standard of 3 pCi/l which is equivalent to a maximum 1/30 of a Working Level at equilibrium for short-lived radon-222 daughters.

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Issue #11: Small Waste Disposal Sites

Review of Radiation Protection Regulation 3-300.0

Section 3-300.0, attempts to avoid proliferation of small waste disposal sites by allowing wastes to be disposed at existing large mill tailings disposal sites.

Recommendations

If the EIR decides to regulate uranium mining activities, then mine spoils and other wastes should be included under this regulation to allow their disposal at large tailings sites. In addition, the EIR should examine the consequences of allowing such co-disposal at an existing site if the large site is performing inadequately or if additional wastes could exacerbate problems with future stabilization.

Reasons

- 1) Some uranium mining districts have existing tailings sites which could be used for the disposal of mine wastes and spoils and thus would avoid the proliferation of small mine waste disposal sites.
- 2) The Working Group's concern over disposing of additional tailings in existing waste retention systems which are performing marginally or inadequately carries over to the disposal of mine wastes in such a pile.
- 3) Issues that the Board may have to consider in its deliberations on small waste disposal sites are:
  - a) Cleanup and reclamation standards for mine spoils;
  - b) An analysis of the potential for environmental impacts of on-site stabilization of mine spoils; and
  - c) Specific language in the regulations that govern tailings disposal as to what constitutes an acceptable existing waste retention system to which mine wastes and spoils may be added.

Issue #12: Preoperation Monitoring and Baseline Data

Revision of Radiation Protection Regulation 3-300.0

Section 3-300.0 requires a preoperation monitoring program to gather baseline data. An operational monitoring program is necessary to measure or evaluate 1) compliance with standards, 2) performance of control systems, 3) environmental impacts, and 4) long-term effects.

Recommendation

The following changes in 3-300.0, are recommended:

0. Up to at least one full year prior to licensing, a preoperation monitoring and reporting program shall be developed and implemented which will provide baseline data on a new uranium processing facility and its environs. This baseline data should be sufficient to exceed all requirements of the operational monitoring and reporting program. Throughout the construction and operating phases of all uranium processing facilities, an operational monitoring and reporting program shall be conducted to measure or evaluate compliance with applicable standards and regulations, performance of control systems and procedures, environmental impacts of operation and to detect potential long-term effects.

Reasons

- 1) At least a full year of preoperation monitoring is required to gather baseline data representative of the full annual climatological cycle with seasonal changes.
2. The extent of baseline data required is defined as being sufficient to support the operational monitoring programs.

Issue #1): Safety Inspection of Waste Retention Systems

Radiation Protection Regulation 3.300.P:

The present regulation provides for a tailings management plan and daily safety inspections of tailings sites by qualified personnel.

Recommendation

The Working Group recommends the following changes in 3.300.P:

- P. Uranium processing facility applicants shall develop a tailings management plan and provide for inspections of tailings or waste retention systems at least daily from the initiation of the operations to the termination of the license by a one-time inspection by a scientist, or management representative whose qualifications have been approved by the Division. Reporting requirements are specified in Section 4.420.

The EIR should be cognizant of changes in reporting requirements in Section 4.420 suggested by the Working Group in relation to 3.300.P.

Reasons

- 1) The explicit duration of the inspections has been included to leave no doubt that constant surveillance of tailings disposal sites is required.
- 2) The proposed change related to the qualifications of the inspector is similar to the certification requirements for a Radiation Safety Officer (RSO) by which the Division reviews and verifies the qualifications of an RSO before he/she begins work. This procedure would assure that the individuals performing daily inspections are competent.
- 3) The Working Group's concern for qualified inspectors also relates to mills on standby status, which are not yet declared inactive, but which are minimally staffed.

Issue #2): Financial Surety Arrangements to Assure Sufficient Radiation Funds

Review of Radiation Protection Regulation 3.315.

Section 3.315 describes 1) the implementation of an acceptable financial surety arrangement, 2) the types of surety allowed and attendant reporting requirements and 3) consequences of failure to comply with the regulations.

Recommendation

The Working Group believes that the EIR will have to reexamine the surety issue because of new EIR stabilization requirements and the stabilization recommendations of the Working Group. The EIR should attempt to settle the controversy surrounding the adequacy of the present regulation if the licensee declares bankruptcy.

The Working Group also recommends that the adequacy of "self insurance" be reviewed in light of a possible contradiction with the Radiation Protection Act (74-3-5A.(1) RSA (3-8) explicitly requiring "the posting of a bond running only to the state".

Reasons

The Working Group recognizes the critical importance of the surety issue because of the severe financial liability which the State would incur if the surety regulation is inadequate. Because evaluation of the regulation's adequacy would require financial expertise beyond the capability of the Working Group, we strongly recommend that the EIR re-examine this issue in depth.

Issue #15: Transportation of Nuclear Waste on the Highway

Review of Radiation Protection Regulation 3.400.

This regulation, 3.400, deals with licensing for transportation of nuclear waste on the highways. Tailings and other wastes from mining and milling processes are exempted. The amount of radioactivity requiring licensing is one microcurie per gallon or per cubic foot.

Recommendation

The Working Group suggests that the EIB reexamine the issue regarding:

- 1) how it relates to U. S. Department of Transportation (DOT) and NRC memoranda-of-understanding,
- 2) whether tailings, and contaminated soil or mine spoils should be regulated,
- 3) whether more detailed regulations are required related to defense nuclear waste and possible high level waste transport into the State.

Reason

This regulation should be evaluated regarding its current application in relation to DOT/NRC rulings. The possibility that tailings or other wastes will be transported within the State should result in a reassessment of the State's role in this issue. Tailings and many other wastes would likely exceed the one microcurie per cubic foot level.

Issue #16: Airborne Effluent Limits, Standards, and Controls

Revision of Radiation Protection Regulation 4.160.G.

This section addresses the concentration of airborne effluents in unrestricted areas, the means of reducing exposure from the source, the control of yellowcake emissions, tailings, and ore dusting.

Recommendation

The Working Group suggests the following changes in 4.160.G:

- G. Uranium processing operations shall be conducted so that all airborne effluent releases are reduced to at least the stringency in Part 4, New Mexico Radiation Protection Regulations. The primary means of accomplishing this for the mill circuit shall be by emission controls. Institutional control measures, such as extending the site boundary and exclusion area, may be employed to ensure that 2.4 site exposure limits are met, but only after all cost effective emission controls measures have been implemented when to control emissions at the source. The licensee shall prepare and submit plant operating procedures for yellowcake drying and packaging operations and yellowcake stack emissions controls equipment descriptions. The licensee shall describe the procedures for assuring that emissions will be within New Mexico standards. Operators shall develop written operating procedures which shall be utilized to control dusting.

The Working Group also recommends that the EIB examine the desirability of preparation and shipping of yellowcake in a form other than dry powder such as a moist cake.

Reasons

- 1) Extending a site boundary is a management option employed by the licensee and is not an institutional control empowered by State or Federal government. The licensee, not the State, is responsible for employing this measure to reduce exposure by expanding the restricted area. The Working Group strongly endorses the radiation protection approach stated in the regulation that boundary extension should not be a substitute for adequate emissions control.
- 2) By requiring the shipment of moist yellowcake, the drying and packaging of yellow cake powder is eliminated. Presently, the emissions from yellow cake drying operations are one of the most significant sources of radioactive effluents in uranium mills. If an accident occurred during the transportation of moist yellow cake, the resulting spill would be easier to contain and clean up in comparison with powder or slurried yellowcake.



Issue #17: Significant Radiation Exposure Pathways

Proposed Radiation Protection Regulation Part 4-160.H.

Part 4 of the present regulations establishes standards for protection against radiation hazards and defines maximum permissible doses and concentrations in environmental media.

Recommendation

The EIR should examine whether the present standards in Part 4 of the Radiation Protection Regulations are adequate to assess all significant pathways of public exposure. The most apparent inadequacy is the lack of any standard explicitly related to the intake of radionuclides via food-chain pathways by the maximum exposed individual.

Reasons

The Working Group believes that all significant exposure pathways should be considered in accordance with the International Commission on Radiological Protection (ICRP Publication No. 29) and the National Council on Radiation Protection and Measurements (NCRP Report No. 78) recommendations for monitoring of facilities which may release radioactive material to the environment. The present regulatory authority is aimed at concentrations in air or water, and not doses from other exposure routes. Therefore, foodchain pathways should be evaluated in uranium mill (and other) licenses, and all other licenses where applicable.

Issue #18: Notification of a Failure or Unusual Condition in a Tailings Binomial System

Revision of Radiation Protection Regulation 4-420.D.

The present regulation requires the notification of the Division of a failure in a waste retention system or unusual conditions which could result in the release of tailings.

Recommendation

The following changes in 4-420.D. are recommended by the Working Group:

- D. The Division shall be immediately notified of any failure in a tailings or waste retention system which results or strictly threatens to result, in a release of tailings or waste into unrestricted areas. The Division shall be notified within twenty-four hours of unusual conditions which would might reasonably lead to failure of the system and result in a release of tailings or waste that may impact into unrestricted areas.

Reasons

The inclusion of this language is needed to indicate that the potential or expectation of movement of wastes into unrestricted areas requires notification.

Issue #19: Stabilization Criteria for Radioactive Milling Waste Retention piles.

Revision of Radiation Protection Regulation 12.300.B.

The present regulation establishes standards for the containment of radionuclides within a stabilized waste retention system and a cover requirement providing 200 years of erosion protection. It is recognized that current proposals by federal agencies will require applications for exemptions from federal regulations.

Recommendation:

The following revisions of 12.300.B. are suggested by the Working Group:

- B. Waste retention systems shall be stabilized, as soon as practicable after inactivation, in such a manner that:
- (a) for existing disposal sites, the transport of radionuclides does not exceed the applicable standards requirements in all of Part 4, including the 1000 ft low is reasonably achievable. Revisions of 4.100 d. Stabilization shall be accomplished by a cover that is designed to protect provides protection of the tailings against erosion for a period of at least 200 years.
  - (b) for new disposal sites, the transport of radionuclides does not exceed the applicable requirements in all of Part 4, including 4.100 d. Stabilization shall be accomplished by a cover that is designed to protect the tailings against erosion for a period of at least 100 years. The cover shall provide a designed reduction of radon-222 flux to 20 pCi/m<sup>2</sup>/sec above background.
  - C. Stabilization requirements shall not apply after closure, if radium-226 in soil concentrations, averaged over areas of 100 square meters, exceeds the background level by less than -
    - (a) 5 pCi/g, averaged over the first 19 cm of soil below the surface, and
    - (b) 15 pCi/g, averaged over 19 cm thick layers of soil more than 19 cm below the surface.

The Working Group believes that the regulations should contain a stipulation that requires licensees to meet a burden of evidence requirement and to provide evidence why it is impractical for them to implement a new state-of-the-art tailings disposal system for existing mills at the time of license renewal. If satisfactory evidence is not provided, the licensees should be required to institute such a system.

Reasons

- I. New Mexico has by far the largest inventory of tailings at existing mill sites (80 x 10<sup>6</sup> MT) of any state and thus is faced with the largest burdens regarding the stabilization of old tailings piles. The recognition that new tailings piles can be better sited and using new technologies which make stringent stabilization economically and economically feasible. It should be understood that the concept of new tailings piles includes new disposal sites at existing mills. Hence it is appropriate that particular concern be given to re-evaluating these sites and developing realistic stabilization requirements.

To ensure practicability, the Working Group discussed in detail what it felt was one of the best examples of an existing site, the Homestake Mining Company (HMC) tailings pile at Milan, New Mexico (20 x 10<sup>6</sup> MT).

The Working Group did not do a cost-benefit analysis but examined the health and environmental impacts of different stabilization requirements at HMC and used results from MENDOS, a computer model analyzing 22 MT and agreement states to perform radiological assessments for uranium mills. Using a radon flux that is 41% higher than that used by EPA (206 pCi/m<sup>2</sup>/sec versus 290 pCi/m<sup>2</sup>/sec), MENDOS calculated a population dose to the bronchi of 232 person-rem per year of exposure to individuals living within 80 km of the tailings pile and 256 person-rem per year of exposure to individuals living beyond 80 km for the unstabilized tailings pile. For the HMC tailings pile stabilized to the 20 pCi/m<sup>2</sup>/sec EPA standard these doses were reduced to 12 and 25 person-rem per year of exposure, respectively.

We have calculated the projected number of fatal lung cancers from this dose for a period of 1000 years using the EPA risk estimator of  $860 \times 10^{-6}$  fatal lung cancers/WLM and obtained 35 (within 80 km) and 94 (beyond 80 km) lung cancer deaths for the unstabilized tailings pile, and 2 (within 80 km) and 5 (beyond 80 km) lung cancer deaths for the stabilized pile.

We have also considered the number of lung cancer fatalities using the risk estimator of  $1.5 \times 10^{-4}$  ( $150 \times 10^{-6}$ ) fatal lung cancers/WLM recently recommended by the National Council on Radiation Protection and Measurements (NCRP Report No. 78). Their

risk estimation procedure reduces each of the above fatal cancer rates by a factor of 3.1. The number of fatal cancers becomes 14 (within 30 km) and 30 (beyond 30 km) for the unstabilized IWC tailings pile and 0.7 (within 30 km) and 1.3 (beyond 30 km) for the stabilized IWC tailings pile. The calculated total number for the unstabilized IWC tailings pile of  $(14 \times 30 = )$  44 fatal lung cancers can be compared with the EPA estimate of 190 fatal lung cancers in 1000 years for an unstabilized  $2 \times 10^6$  M tailings pile (EPA did not report health effects calculation for larger piles such as IWC). The EPA analysis of the model tailings pile appears to overestimate health effects from the Homestake pile.

The Working Group believes that EPA's including health effects calculated for areas beyond 30 km from the tailings pile is hypothetical and difficult to justify. Excluding these health effects would lower the expected number of lung cancer fatalities by more than 65%.

Based on these calculations, we conclude that the EPA analysis for the model tailings pile overestimates the number of health effects from the IWC tailings pile by a factor of 1.3 (a factor of 2 if we ignore the very hypothetical health effects beyond 30 km) to 11. Had we scaled our calculations for the smaller size EPA tailings pile and the smaller radon flux, the discrepancy would have been greater.

The Working Group also considered the risk to the maximum exposed individual from an existing tailings pile after stabilization. As we discuss later, we believe that some cover on existing tailings piles is necessary to ensure that the tailings are isolated from the environment and that release of radioactive material is as low as reasonably achievable. Although the amount of cover would be determined on a case-by-case basis for each existing tailings pile, we chose a cover attenuating the radon release by 75% as a typical example for a risk calculation.

The resulting lifetime risk of dying from a radiation-induced lung cancer for the maximum exposed individual ranged between one chance in 86,000 (EPA calculation) to one chance in 750,000 (National Council on Radiation Protection and Measurements calculation) for each year of exposure. The risk for an average exposed individual would be less than this risk for a maximum exposed individual. The Working Group believes that, although the actual degree of radon flux reduction must be determined on a case-by-case basis, the individual risks indicated by these calculations are acceptable.

\* The reduction results from a reduction in the risk estimated by a factor of 5.7, and an increase in the way MLD exposure is calculated by a factor of 1.04, to give an overall reduction of 3.1.

Group believes that EPA underestimated stabilization costs. The Department of Energy estimates that the IWC tailings pile could be stabilized to the early DOE requirements for \$2 million dollars versus the EPA estimate of 30 million dollars for similar requirements for a  $22 \times 10^6$  M pile. The mill owner's estimate for this level of stabilization was 60 to 120 million dollars. Although the present standards are more lenient, this comparison shows that the EPA cost estimate methodology may underestimate costs by a factor of 2 to 3.

The EPA estimates that the cost per fatality averted for the  $2 \times 10^6$  M model tailings pile is 130,000 dollars for the 20 pCi/m<sup>2</sup>/sec and 1000 year longevity standards. Our estimates of the cost per fatality would be a factor of at least 3 to as much as a factor of 31 more than EPA's, that is, from about 390,000 to 5,300,000 dollars.

Our conclusion from this analysis is that we can not justify the 20 pCi/m<sup>2</sup>/sec radon flux standard on the basis of health effects averted (possibly as low as 14 per 1000 years) and extraordinary costs (up to 5 million dollars per fatality averted) for existing tailings piles. This conclusion does not mean that we advocate no stabilization be done on existing piles. We wholeheartedly agree with EPA's primary goal of stabilization - isolation of tailings from the environment. For recommendation of 250 year longevity standard for existing piles would require probably an earthen and rock cover that would assure isolation of the tailings.

As the DOE Remedial Action Program for inactive tailings piles progresses, actual cost figures for tailings stabilization will be obtained which may provide better cost estimates for the state's existing piles. These cost figures may show that more stringent longevity and radon control standards are reasonably achievable. The EIB should keep apprised of this stabilization experience and should consider revised stabilization standards in the future if appropriate.

- 2) The EPA has issued final health and environmental standards for stabilization of tailings piles which include a 20 pCi/m<sup>2</sup>/sec flux standard. The initial NRC proposal of 2 pCi/m<sup>2</sup>/sec standard was revised by EPA because the incremental benefits of the more stringent standard were not justified by the increased costs, and the initial standard was technically difficult to achieve. On the basis of the atmospheric mixing of radon emitted from a tailings pile and the background emanation rate of about 0.9 pCi/m<sup>2</sup>/sec a 2 pCi/m<sup>2</sup>/sec (above background) standard appears unreasonably stringent.

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- 3) Erosion protection of new tailings piles designed for a period of at least 1000 years is a reasonable expectation by extrapolating from the assumption that society can stabilize existing piles with less than optimum design or siting for 200 years. By selecting optimum sites and employing the latest technology, a five-fold increase in longevity is practical. These new technologies (e.g. staged trench disposal) can provide much improved long-term isolation without the exorbitant costs involved with applying these requirements to existing piles. The words "at least" have been added to explicitly indicate that the erosion protection periods stated are the minimum allowed. The longevity standards of 200 and 1000 years should require erosion protection to a high level of confidence.
- 4) The Working Group feels that the ALARA approach (as low as is reasonably achievable) should be applied to the stabilization of tailings piles. Therefore, Section 4-100.B. has been cited and use of the word "requirements" is necessary.
- 5) The levels of radium-226 in soil define the amount of radioactive contamination which will require cleanup and stabilization; the proposed standards are in accord with EPA standards. This stabilization would probably not be in-place disposal but would involve decontamination and disposal at a large tailings disposal site under Section 3-300.B.

#### Issue 400: Approval and Implementation of Stabilization Plans

##### Revision of Radiation Protection Regulation 12-300.H.

The regulation 12-300.H. stipulates that the licensee and the Division approve projected stabilization plans and costs for existing waste retention systems. Prior to undertaking stabilization, final plans are developed by the licensee and approved by the Division.

##### Recommendation

The Working Group suggests that the EIB hold hearings on 12-300.H. to resolve difficulties in the implementation of this regulation. An endless exchange of proposals and counter proposals can result in unacceptable delays in finalizing stabilization plans and costs. The EIB should consider a time limit (such as 2 years) beyond which the licensee can no longer delay the development of a plan. When reexamining this regulation, the EIB should revise the regulations so that unacceptable delays in plan development are not allowed.

##### Reasons

As part of the Working Group's emphasis on the cessation of use of existing tailings disposal systems and the development of new systems, we believe that the regulations must encourage the prompt development of engineering plans for tailings stabilization. The regulations at present contain provisions which would allow an endless review process to delay the approval of a proposed plan. The Division must have the authority to limit such delays without involving the termination of an existing license.

ENVIRONMENTAL POLICY INSTITUTE

STATEMENT OF DAVID BERICK  
DIRECTOR, NUCLEAR WASTE & SAFETY PROJECT  
ENVIRONMENTAL POLICY INSTITUTE

BEFORE

JOINT HEARING ON THE "URANIUM MILL TAILINGS RECLAMATION ACT"

BY

SUBCOMMITTEE ON ENERGY AND ENVIRONMENT  
OF THE HOUSE INTERIOR COMMITTEE

AND

SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT  
OF THE SENATE ENERGY AND NATURAL RESOURCES COMMITTEE

JULY 16, 1985

On behalf of the Environmental Policy Institute, I want to thank Chairman Udall and Chairman Domenici for the opportunity to testify on H.R. 2236 and S. 1004, the "Uranium Mill Tailings Reclamation Act."

I would like to begin by considering the question Chairman Domenici asked in the beginning of his statement for the record accompanying S. 1004 when it was introduced, "Why are we introducing another piece of legislation?"

In 1978, Congress considered and explicitly rejected the extension of taxpayer subsidization of clean-up costs to existing mills as now proposed. Why should Congress reverse the policy adopted in Title II of the 1978 Act that responsibility for mill tailings disposal at all existing mills was the responsibility of the mill operators? Why should the principle, that an industrial operation which so clearly results in waste disposal and

environmental problems be held responsible for the liability, the costs and the completion of mill site and tailings clean-up be repealed? Why should the Federal Government assume those responsibilities?

#### CLEAN-UP FINANCING MECHANISM NOW EXISTS

Contrary to the "Findings and Purpose" of the proposed legislation, it is our view that the 1978 Act did create a comprehensive method for financing reclamation of mill sites. First, the Act clearly established that uranium mill tailings were a material regulated under the Atomic Energy Act and would be regulated as a part of uranium mill regulation, a change from preexisting authority under RCRA. Second, the Act required all mill licenses to contain such terms and conditions as necessary to assure that reclamation was completed prior to termination. Third, the Sec. 203 of the Act required the NRC to ensure that

"...adequate bond, surety, or other financial arrangement (as determined by the Commission) will be provided, before termination of any license for byproduct material, as defined in section 11(e)(2), by a licensee to permit the completion of all requirements established by the Commission for the decontamination, decommissioning, and reclamation of sites, structures, and equipment used in conjunction with byproduct...."

In exchange for this delegation of responsibility for existing mills, the 1978 Act instituted a 100% taxpayer-funded remedial program to clean-up the so-called inactive mill sites regardless of the capability or liability of the site owners for such a clean-up. At the time, these costs were estimated to be less than \$200 million. DOE's current cost estimates show total Title I clean-up costs of slightly less than \$700 million; a not inconsiderable alleviation of financial responsibility.



While it is our understanding that not all uranium mills have approved decommissioning and tailings disposal plans, nor do all mills have financial surety arrangements necessary to comply with all final EPA requirements, this is regulatory problem, not a structural one. The NRC and state regulatory agencies should get their respective houses in order and their licenses up to date including groundwater monitoring plans and other actions necessary to ascertain the level of reclamation needed, as well as increases in financial surety coverage. I would also renew my suggestion to NRC that it promptly conform its regulations to those promulgated by EPA. NRC is now 16 months behind the statutory deadline for conformance.

Since clean-up of mill sites must proceed in any case, even under the proposed legislation, consistent with the regulatory requirements of the 1978 Act, the regulatory delays in establishing final standards and the level of financing needed to comply with those standards by individual mills are not resolved by the S. 1004 or H.R. 2336. Transferring responsibility to the Federal Government will not make the regulatory delays or knots, to the extent that they actually exist, disappear.

I will have to agree to disagree with the sponsors of the proposed legislation as to the reason for the regulatory delays and controversy. If part of the problem S. 1004 and H.R. 2336 are intended to address is that mills are closing down in the absence of final reclamation regulations, plans or surety arrangements being in place to assure timely reclamation, the blame rests with those who spent so much time trying to amend and manipulate

implementation of the 1978 Act.

While the proposed legislation may decrease the resistance, litigative, political and otherwise, of some uranium producers to reclamation regulations, notably those who are leaving the uranium business, this is not a sufficient nor enforceable basis for transferring reclamation responsibility to the Federal Government.

#### IS FEDERAL INTERVENTION NEEDED TO ASSURE RECLAMATION?

It has been argued in the context of the S. 1004 and H.R. 2336 that regardless of the history of regulatory entanglements, the history of the 1978 Act and subsequent amendments, and other matters of record, the uranium industry is facing hard economic times and a federal clean-up program is the only way in which the existing mill sites will be cleaned up.

These arguments imply that the uranium producers will default on their licenses, on their surety arrangements, will merely cease to be viable commercial entities and/or will willingly violate license termination requirements made upon them by the NRC and/or state regulatory agencies.

In some cases, although no evidence has been presented to my knowledge of companies which may default, a mill owner may not be capable of meeting disposal requirements. This will be a serious problem, but not one which requires the Congress to act now, before a single company has defaulted, to restructure the legal responsibilities of the entire industry. Contingency planning, yes. Restructuring, no.

Should significant environmental or public health and safety hazards from defaults become apparent, Congress could then act to

incorporate such site into the Federal Government's existing remedial program under UMTRCA or EPA could probably act under Superfund since the site would no longer be an NRC regulated site. EPA, as suggested in a recent U.S. Court of Appeals decision (*Eagle-Picher Industries v. EPA*), in which the State of New Mexico intervened, may already have authority in some cases to address mill reclamation under Superfund. In this case, the court upheld the listing of two active uranium mill sites on EPA's Superfund National Priority List. As a contingency, those changes could be made in law now, such as by explicitly including uranium mill sites whose owners have defaulted on reclamation requirements in Superfund.

When federal intervention is necessary, as it was in the case of many of the Title I UMTRCA sites, we will support that intervention to protect public health and safety and the environment. The proposed legislation makes federal intervention a policy for an entire industry even where no specific cause has been demonstrated. In the absence of evidence that a substantial number of uranium mill licensees have or will default on their surety arrangements or that they will be financially unable to comply final with license termination requirements, the proposed legislation is a best premature and at worst an unwarranted financial windfall.

#### THE NEED FOR TIMELY RECLAMATION

We agree with those, who in supporting S. 1004 and H.R. 2336, argue that we ought to get on with mill site reclamation, although this is a new argument for many. However, there is

nothing inherent in a federal clean-up program that would make it more likely to achieve rapid reclamation than the current system. In fact there are elements of a federal clean-up program, as demonstrated by the DOE Uranium Mill Tailings Remedial Program under UMTRCA, that would argue against a federal program. Almost seven years after enactment of UMTRCA, reclamation has not been completed at a single site. Only one site is close to completion. Of the top nine "high priority" sites, clean up of the actual mill site will have begun at only four by the end of this fiscal year.

DOE would have to establish a new program to manage the new "existing site" reclamation including financial, administrative, contracting operations based upon the complicated new funding mechanism. At the mill sites, DOE would also have to recreate site specific reclamation programs from the ground up, beginning with hiring contractors to survey the sites before it can progress with clean-up. DOE would be required to reconstruct a great deal of the on-site management, including quality control, environmental and occupational regulation, as well as physical construction capability at the sites.

DOE would also be constrained by a funding and budget process in conducting its activities because, and inspite of, the establishment of the proposed mill tailings fund. Unlike the current system with multiple financing arrangements tied to individual sites, the proposed "existing site" reclamation would be dependent upon the funding and priorities of a single federal program. Simply put, DOE would have to establish priorities of clean-up based upon available funding. Work could not begin on

all sites at once, or even when operations at a particular site have ceased. It might be many years before reclamation began at a given site. A look at the Title I program and the proposed funding levels in the proposed legislation suggest lengthy delays in reclamation.

Using the DOE's high-level waste fund as a basis for estimation, the 0.15 mil/kwh fee would generate roughly \$60 million in FY '86 increasing to \$83.7 million in FY 1990. If this level represents 55% of the annual program budget, the program budget would be roughly \$109.3 million in FY '86 and \$152.2 million in FY '90.

By comparison the FY '86 request for DOE's Title I remedial program is \$110 million, roughly equal to projected annual budget for the proposed "existing sites" program. While the level of work in the Title I program is moving into the construction stage, the Title I program has only 15% of the amount of tailings to handle as the proposed program which suggests a rather drawn out reclamation schedule for the proposed program funding level.

Likely delays, possibly lengthy ones, between cessation of operation and the onset of reclamation by DOE raises a number of problems and might contribute to increases in the amount of reclamation required. For example, windblown tailings from dried out impoundments could increase the amount of contaminated area requiring clean-up. Delays might also result in the need to reestablish basic services, such as utilities or water supplies, at individual sites further complicating clean-up.

Furthermore, while there is a clear interest on the part of

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the sponsors of the legislation to limit the economic disruption in communities dependent on mills now being shutdown through initiation of reclamation, it is likely that the proposal will have the opposite effect since it will result in delays between cessation of operation and reclamation at many if not all sites that could be minimized under the current regulatory system which can require prompt reclamation.

#### SOLVING OR EXACERBATING REGULATORY PROBLEMS?

Far from unraveling the regulatory problems arising from UMTRCA, the proposed exemption from all legal or regulatory responsibility for mill site reclamation beyond remuneration of 15% of costs would create a regulatory twilight zone which UMTRCA sought to avoid. For example, could any mill license require conditions for tailings management which would facilitate final disposal or site reclamation in the absence of licensee responsibility for those functions? Could licensees be required to prevent off-site releases, such as groundwater contamination, which would occur after the site was turned over to DOE? Could interim stabilization or controls be required until DOE physically began reclamation even though operations had ceased? Even minimal control requirements such as the maintenance of warning signs or fences? Sec. 9(f) of the proposed legislation which limits operator financial obligations suggests that the answer to all of these questions is no.

Under what regulatory framework would DOE conduct the clean-up? The language of the proposed legislation transferring licenses and applying UMTRCA regulation raises more questions than it answers. Would DOE actually be subject to Agreement State

regulation upon "transfer" of the license? To NRC?

Clean-up is supposed to be in compliance with applicable UMTRCA standards. UMTRCA obviously has no standards for a DOE clean-up other than those for Title I which are inconsistent with Title II regulations for existing sites. To what extent would EPA and NRC standards have to be revised to reflect DOE responsibility? Would a different cost/benefit relationship apply to a federal clean-up?

It is clear that before any mills could cease operation, within the terms of the proposed legislation, NRC, DOE, EPA, and the Agreement States would have to conduct rulemakings to clarify the conditions for cessation and transfer of the sites to DOE. Subsequently, NRC and the Agreement States would have to revise the individual licenses upon completion of those rulemakings which would further delay the desired reclamation. If there is regulatory uncertainty today concerning the obligations of mill operators for license termination, it will only be compounded by enactment of an entirely new scheme and with predictable delays.

#### EQUITY OR SUBSIDY?

Unlike the 1978 Act, which directed taxpayer funding to a set of sites meeting specific conditions of federal contracts and regulatory status, the proposed legislation would create a blanket subsidization of reclamation of all mill sites regardless of their respective circumstances or qualification. Even if the Federal Government has an obligation to pay for commingled tailings generated in fulfillment of government contracts, which I do not concede, why should taxpayers pay thirty percent of the

costs of tailings and mill reclamation at the 11 of the 24 mills covered by the proposed legislation that did not produce any uranium for the government? These eleven mills constitute roughly 20% of the total tailings covered by the proposed legislation.

If the principle that the legislation is trying to establish is that the Federal Government is responsible for commingled tailings, as in the 1978 Act, than that responsibility should be established on a case-by-case basis with commingled tailings disposal costs directly proportional to the costs of reclamation of the particular mill which would range as high as 77%.

As for the ratepayer share, the mill tailings fund outwardly mimics the fund created for the high-level waste program in the Nuclear Waste Policy Act, but it is completely contrary in its adherence to the high-level waste fund principle that ratepayers and utilities pay fees reflective of for their own waste disposal costs.

Under the high-level fund, the mil per kwh fee is a fee on current users of electricity to pay for the costs associated with the waste generated by that current usage. Wastes already produced, analagous to the entire proposed mill tailings clean-up, are apportioned on a one-time basis directly according to the amount of spent fuel each utility produced prior to the on-set of the fee.

Whereas utilities and consumers pay proportionately to the amount of high-level waste for which they actually are responsible, under the proposed mill tailings fund, ratepayers and utilities shares bear no correlation to the amount of waste



individual ratepayers or utilities might be construed to be responsible for generating. Further unlike the high-level fund where utilities are the generators and have direct responsibility for generation of waste, the tailings fund holds all utilities responsible for all existing tailings whether or not there was any direct contractual relationship. This is also a major departure from the principle involved in the federal share, as proposed or in Title I of UMTRCA, where there was at least a prima facie contractual link between subsidization and uranium purchase.

In short, the equity of apportioning waste disposal costs in the high-level fund is entirely absent from the mill tailings funding scheme.

#### CONCLUSION

The 1978 UMTRCA balanced a number of basic principles all aimed at minimizing the environmental hazard from uranium mill tailings. Inactive sites would be cleaned up by the taxpayers, but all existing sites would be the responsibility of the corporations running them. Whereas inactive site clean-up was financed entirely by taxpayers, Sec. 115 provided for the Attorney General to study the potential liability of individual site owners and take such action as was in the public interest to hold those site owners responsible. Despite the apparent inability of the Justice Department to take this charge seriously, Sec. 115 at least preserved the semblance of holding mill operators responsible for environmental hazards despite federal intervention.

Also under UMTRCA, reclamation of existing sites was the

financial responsibility of the licensees, but the long-term hazard represented by mill tailings argued for the transfer of permanent tailings disposal sites to governmental custody thereby limiting licensee responsibility.

There was some rhyme and some reason to UMTRCA and we supported its enactment.

Although the experience of the last seven years would argue strongly against it, we are willing to discuss how to make sure that the UMTRCA program results in timely and adequate reclamation. We are willing to discuss the specific problems of specific mill sites in meeting the requirements of UMTRCA. We are willing to discuss a process for establishing, on a case-by-case basis, whether the Federal Government should reimburse operators for commingled tailings because of prior contractual commitments. We are willing to discuss establishing contingency plans in case individual mill operators default on their license or surety commitments. If there is a need to provide some sort of guaranteed loan or other cash flow mechanism to allow operators to meet their reclamation obligations, we are also willing to discuss such proposals.

What we do not believe can be debated, however, is the dismantlement of Title II of UMTRCA and the blanket transfer of responsibility for mill site reclamation from mill operators to the Federal Government as proposed in H.R. 2336 and S. 1004.

Thank you for the opportunity to testify, this concludes my statement.



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

RESOURCES COMMUNITY  
AND ECONOMIC DEVELOPMENT  
DIVISION

July 15, 1985

The Honorable Morris K. Udall  
Chairman, Subcommittee on Energy  
and Environment  
Committee on Interior and Insular Affairs  
House of Representatives

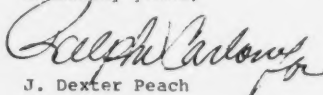
Dear Mr. Chairman:

On June 21, 1985, your office requested a briefing on several questions related to S. 1004 and H.R. 2236, the proposed "Uranium Mill Tailings Reclamation Act of 1985," in preparation for a joint hearing of your subcommittee and the Subcommittee on Energy Research and Development, Senate Committee on Energy and Natural Resources.

Attached for your information is a briefing paper prepared by our staff. We obtained the information in the paper from our working files, the Nuclear Regulatory Commission and four states that regulate uranium mills, and from the Securities and Exchange Commission. While the information is current, the limited time available to us to prepare the briefing document did not permit us to independently verify its accuracy.

Please call on us if we can be of further assistance.

Sincerely yours,

  
J. Dexter Peach  
Director

Attachment

BRIEFING PAPER\*

ANSWERS TO QUESTIONS IN PREPARATION FOR  
A HEARING ON THE PROPOSED "URANIUM MILL  
TAILINGS RECLAMATION ACT OF 1985"  
(S. 1004 AND H.R. 2236)

JULY 1985

\*THIS DOCUMENT WAS PREPARED BY THE GAO STAFF TO ASSIST THE SUBCOMMITTEE ON ENERGY AND ENVIRONMENT, HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS PREPARE FOR A HEARING ON TWO BILLS. IT IS BASED ON THE MOST CURRENT READILY AVAILABLE INFORMATION. THE LIMITED TIME AVAILABLE DID NOT PERMIT GAO TO INDEPENDENTLY VERIFY THE ACCURACY OF THE INFORMATION.

QUESTIONS ADDRESSED IN THIS PAPER

\*HOW MANY "ACTIVE" URANIUM MILL SITES ARE THERE?

\*WHAT VOLUME OF URANIUM MILL TAILINGS HAS BEEN GENERATED BY FEDERAL AND COMMERCIAL URANIUM PURCHASES?

\*WHAT ARE THE ESTIMATED COSTS OF CLEANING UP THE MILL TAILINGS?

\*WHO IS LIABLE FOR CLEANING UP URANIUM MILL TAILINGS?

--Are current owners liable?

--Are parent companies of owners liable?

--Do companies have financial resources to pay cleanup costs?

--Can the EPA Superfund be used to finance cleanup activities?

\*ARE THERE IMPORTANT ISSUES RAISED BY THE SUBJECT BILLS DESERVING OF CONGRESSIONAL CONSIDERATION?

--Financial provisions

--Federal/State relationships

## ACTIVE\* URANIUM MILLS

|                                                    | Number of<br><u>Mills</u> |
|----------------------------------------------------|---------------------------|
| *REGULATED BY THE NUCLEAR<br>REGULATORY COMMISSION |                           |
| --SOUTH DAKOTA                                     | 1                         |
| --UTAH                                             | 4                         |
| --WYOMING                                          | 10                        |
|                                                    | <u>15</u>                 |
| *REGULATED BY STATES                               |                           |
| --COLORADO                                         | 3                         |
| --NEW MEXICO                                       | 7                         |
| --TEXAS                                            | 4                         |
| --WASHINGTON                                       | 3                         |
|                                                    | <u>17</u>                 |
| *TOTAL                                             | <u>32</u>                 |

PAGE 10 LISTS THE ACTIVE URANIUM MILL OWNERS,  
LOCATIONS, THE PARENT COMPANIES OF MILL OWNERS  
(WHERE APPLICABLE), AND THE CURRENT STATUS OF  
EACH MILL.

\*AS DEFINED IN S. 1004 AND H.R. 2236, ACTIVE  
URANIUM MILLS INCLUDE MILLS WITH LICENSES IN  
EFFECT ON OR AFTER JANUARY 1, 1978.

WHAT VOLUME OF MILL TAILINGS HAS BEEN  
GENERATED BY FEDERAL AND COMMERCIAL URANIUM  
PURCHASES?

| MILLS<br>REGULATED BY | VOLUME GENERATED BY <sup>a</sup>            |                         | TOTAL        |
|-----------------------|---------------------------------------------|-------------------------|--------------|
|                       | FEDERAL<br>CONTRACTS                        | COMMERCIAL<br>CONTRACTS |              |
|                       | --(millions of metric tons <sup>b</sup> )-- |                         |              |
| NRC                   | 18.6                                        | 59.6                    | 78.2         |
| States                | <u>37.3</u>                                 | <u>81.2</u>             | <u>118.5</u> |
| Total                 | <u>55.9</u>                                 | <u>140.8</u>            | <u>196.7</u> |
| Percent of<br>Total   | 28.4%                                       | 71.6%                   | 100%         |

<sup>a</sup>Data as of June 1985.

<sup>b</sup>1 metric ton is equal to 1.102 short tons  
(2,000 lbs.).

SEE PAGE 11 FOR VOLUMES OF MILL TAILINGS BY  
MILL.

SUMMARY OF ESTIMATED COSTS OF URANIUM  
MILL TAILINGS CLEANUP

| <u>MILL LOCATIONS</u> | <u>NUMBER<br/>OF MILLS</u> | <u>EXISTING<br/>VOLUME<br/>(millions of<br/>metric tons)</u> | <u>ESTIMATED<br/>CLEANUP<br/>COST<br/>(millions)</u> | <u>COST PER<br/>TON</u> |
|-----------------------|----------------------------|--------------------------------------------------------------|------------------------------------------------------|-------------------------|
| NRC                   |                            |                                                              |                                                      |                         |
| SOUTH DAKOTA          | 1                          | 3.2                                                          | \$ 27.4                                              | \$8.56                  |
| UTAH                  | 4                          | 13.9                                                         | 8.9                                                  | 0.64                    |
| WYOMING               | 10                         | 61.1                                                         | 127.0                                                | 2.08                    |
| SUBTOTAL              | <u>15</u>                  | <u>78.2</u>                                                  | <u>\$163.3</u>                                       | 2.09                    |
| STATES                |                            |                                                              |                                                      |                         |
| COLORADO              | 3                          | 14.0                                                         | \$ 44.4                                              | 3.17                    |
| NEW MEXICO            | 7                          | 85.9                                                         | 38.5                                                 | 0.45                    |
| TEXAS                 | 4                          | 13.4                                                         | 14.4                                                 | 1.08                    |
| WASHINGTON            | 3                          | 5.2                                                          | 7.1                                                  | 1.37                    |
| SUBTOTAL              | <u>17</u>                  | <u>118.5</u>                                                 | <u>\$104.4</u>                                       | .88                     |
| TOTAL                 | <u>32</u>                  | <u>196.7</u>                                                 | <u>\$267.7</u>                                       | 1.36                    |

SEE PAGE 12 FOR CLEANUP COST ESTIMATES BY MILL.

SOURCE: NRC



## URANIUM MILL TAILINGS CLEANUP LIABILITY

\*ACCORDING TO NRC, CURRENT MILL OWNERS (LICENSED AND REGULATED BY NRC OR STATES) ARE LIABLE FOR CLEANING UP MILL TAILINGS PILES IN COMPLIANCE WITH EPA GENERAL ENVIRONMENTAL STANDARDS, AND NRC/STATE REGULATIONS.

NRC AND STATES HAVE ESTABLISHED SURETY ARRANGEMENTS TO COVER CLEANUP COSTS FOR 27 OF THE 28 MILLS THAT HAVE GENERATED MILL TAILINGS. THE REMAINING 4 MILLS WERE LICENSED FOR CONSTRUCTION BUT WERE NEVER BUILT. (SEE PAGES 13 THRU 15 FOR DETAILS).

\*ACCORDING TO NRC OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS OFFICIALS, BECAUSE THE TENNESSEE VALLEY AUTHORITY IS A GOVERNMENT AGENCY, NRC IS NOT REQUIRING TVA TO ESTABLISH SURETY AGREEMENTS FOR CLEANUP OF THE EDMONT, S.D., MILL.

\*ACCORDING TO NRC, PARENT COMPANIES OF MILL OWNERS ARE LIABLE FOR CLEANUP OF MILL TAILINGS PILES ONLY IF SPECIFIC ARRANGEMENTS, CALLED CORPORATE GUARANTEES, HAVE BEEN MADE.

THIS HAS OCCURRED AT 5 OF 25 MILLS FOR WHICH SUBSIDIARY/PARENT COMPANY RELATIONSHIPS EXIST (SEE PAGES 13 THRU 15).

\*EPA SUPERFUND MONEYS CAN BE USED TO PAY FOR CLEANUP OF MILL TAILINGS.

3 MILLS ARE ON THE EPA SUPERFUND NATIONAL PRIORITY LIST. THEY ARE:

- Church Rock, N.M. (United Nuclear Corporation)
- Canon City, CO. (Canon Corporation)
- Homestake, N.M. (Homestake Mining Company)

URANIUM MILL OWNERS FINANCIAL  
SURETY ARRANGEMENTS

- \*FINANCIAL SURETY ARRANGEMENTS FOR URANIUM MILLS GENERALLY INVOLVE A COMBINATION OF LEGAL COMMITMENTS, AND/OR FINANCIAL INSTRUMENTS.
- \*THE MOST COMMON ARRANGEMENT IS FOR MILL OWNERS TO SIGN A CONTRACT OR OTHER LEGAL DOCUMENT WITH A STATE GOVERNMENT OR NRC (KNOWN AS AN OWNER GUARANTEE) COMMITTING THEM TO PAY SITE CLEAN-UP COSTS. A CORPORATE GUARANTEE IS A SIMILAR COMMITMENT SIGNED BY AN OFFICIAL OF THE MILL OWNER'S PARENT COMPANY.
- \*OTHER ARRANGEMENTS INCLUDE (1) ESCROW ACCOUNTS, (2) SURETY BONDS ISSUED BY AN INSURANCE OR BONDING COMPANY TO COVER EXPECTED CLEAN-UP COSTS, AND (3) LETTER OF CREDIT ISSUED TO NRC OR A STATE GUARANTEEING THAT A BANK WILL HONOR THE FEARER'S REQUEST FOR THE SPECIFIED AMOUNT SHOULD THE MILL OWNER DEFAULT. (SEE PAGES 13 THRU 15 FOR THE TYPE, AMOUNT, AND PURPOSE OF EACH MILL'S FINANCIAL SURETY ARRANGEMENTS.)

URANIUM MILL COMPANIES' FINANCIAL RESOURCES

\*THE FISCAL YEAR 1984 CONSOLIDATED FINANCIAL STATEMENTS OF THE 12 COMPANIES WITH THE LARGEST VOLUMES OF URANIUM MILL TAILINGS (INCLUDING 4 MILL OWNERS AND 8 PARENT COMPANIES OF MILL OWNERS) SHOWED THAT:

--ASSETS RANGED FROM \$3 MILLION TO \$63.3 BILLION.

--NET INCOMES VARIED FROM A LOSS OF \$300,000 TO A PROFIT OF \$5.5 BILLION. (SEE PAGE 16 FOR DETAILS).

\*FOUR OF THE PARENT COMPANIES HAVE EXECUTED CORPORATE GUARANTEES COMMITTING THE CORPORATIONS TO PAY CLEANUP COSTS.

FINANCIAL PROVISIONS OF  
S. 1004 AND H.R. 2236

- \*URANIUM MILL TAILINGS FUND (SECTION 8) WOULD BE SET UP CONSISTENT WITH THE NUCLEAR WASTE FUND (SECTION 302) OF THE "NUCLEAR WASTE POLICY ACT OF 1982".
- \*TREASURY BORROWING AND LENDING INTEREST RATE PROVISIONS (SECTION 8, PARAGRAPHS (C)(3) AND (5)) ARE CONSISTENT WITH THE INTEREST RATE PROVISIONS OF THE NUCLEAR WASTE POLICY ACT.
- \*THE BILLS STIPULATE THAT UTILITIES WOULD CONTRIBUTE .15 MILLS PER KILOWATT HOUR OF ELECTRICITY GENERATED FROM NUCLEAR POWER PLANTS TO A URANIUM MILL TAILINGS FUND. BASED ON ENERGY INFORMATION ADMINISTRATION ESTIMATES OF ELECTRICITY GENERATION IN THE YEARS 1986 THROUGH 1995, WE ESTIMATE THAT UTILITY CONTRIBUTIONS WOULD TOTAL ABOUT \$500 MILLION FOR THE 10 YEARS.
- \*THE BILLS ALSO STIPULATE THAT CONTRIBUTIONS TO THE FUND WILL BE MADE AS FOLLOWS:

|                    | <u>Percent</u> |
|--------------------|----------------|
| Utilities          | 55             |
| Federal Government | 30             |
| Mill Owners        | 15             |
| Total              | <u>100</u>     |

- \*BASED ON THE ABOVE PERCENTAGES AND ESTIMATED UTILITY CONTRIBUTIONS, WE ESTIMATE THAT FEDERAL GOVERNMENT AND MILL OWNER CONTRIBUTIONS TO THE FUND FOR THE 10-YEAR PERIOD WOULD TOTAL ABOUT \$274 MILLION AND \$136 MILLION, RESPECTIVELY.

FEDERAL/STATE RELATIONSHIP ISSUES RAISED  
BY S. 1004 AND H.R. 2236

\*THE BILLS REQUIRE THAT MILL LICENSES BE  
TRANSFERRED TO THE SECRETARY OF ENERGY NOT  
LATER THAN THE DATE THAT THE SECRETARY  
BEGINS MILL RECLAMATION AND DECOMMISSIONING  
AT AN ACTIVE SITE.

\*ACCORDING TO NRC, IF DOE ASSUMED A MILL  
LICENSE ISSUED BY AN AGREEMENT STATE, THE  
LICENSING AND REGULATORY AUTHORITY WOULD  
REVERT FROM THE STATE TO NRC.

\*THERE ARE EXAMPLES OF NRC REGULATING DOE

NUCLEAR WASTE POLICY ACT OF 1983  
(SEC. 114).

ENERGY REORGANIZATION ACT OF 1974  
(SEC. 202).

CLINCH RIVER BREEDER REACTOR PROJECT

## ACTIVE URANIUM MILLS

| <u>OWNER/LOCATION</u>            | <u>PARENT COMPANY</u>  | <u>MILL STATUS</u> |
|----------------------------------|------------------------|--------------------|
| <u>LICENSED BY NRC</u>           |                        |                    |
| TVA-Edgemont (S.D.)              |                        | DR (04/83)         |
| Umetco (Ut.)                     | Union Carbide Corp.    | IS                 |
| Atlas Corp. (Ut.)                |                        | IS (04/84)         |
| Plateau Resources (Ut.)          | Consumer Power Co.     | IS (08/82)         |
| Rio Algom (Ut.)                  | Rio Algom Ltd (Canada) | OP                 |
| Exxon (Wy.)                      | Exxon Corp.            | DR (06/84)         |
| American Nuclear Corp. (Wy.)     |                        | IS (04/84)         |
| Petrochemicals (Wy.)             | Texaco (Getty Oil)     | IS (05/85)         |
| Minerals Explor. (Wy.)           | Union Oil Co.          | IS (11/81)         |
| Umetco (Gas Hills) (Wy.)         | Union Carbide Corp.    | IS (11/84)         |
| Western Nuclear (Wy.)            | Phelps Dodge Corp.     | IS (06/81)         |
| Pathfinder (Gas Hills) (Wy.)     | Cogema (French)        | SS (04/85)         |
| Pathfinder (Shirley Basin) (Wy.) | Cogema (French)        | OP                 |
| Bear Creek (Wy.)                 | Union Pacific Corp.    | OP                 |
| Silver King Mines (Wy.)          | TVA                    | NB                 |

LICENSED BY STATES

|                              |                        |            |
|------------------------------|------------------------|------------|
| Anaconda-Bluewater (N.M.)    | Atlantic Richfield     | IS (00/83) |
| Homestake Mining Co. (N.M.)  |                        | IS (03/85) |
| Kennecott Minerals (N.M.)    | SOHIO Reserve          | IS (00/82) |
| Quivira Mining (N.M.)        | Kerr McGee Corp.       | IS (02/85) |
| United Nuclear Corp. (N.M.)  |                        | IS (08/79) |
| Rokum Resources Corp. (N.M.) |                        | NB         |
| Gulf Minerals (N.M.)         |                        | NB         |
| Conoco-Pioneer Nuclear (Tx.) | Dupont                 | DR (00/83) |
| Exxon Minerals Co. (Tx.)     | Exxon Corp.            | DR (00/80) |
| Chevron Resources (Tx.)      | Standard Oil of Calif. | IS (06/85) |
| Anaconda Minerals (Tx.)      | Atlantic Richfield     | NB         |
| Western Nuclear Inc. (Wa.)   | Phelps Dodge Corp.     | IS (07/84) |
| Dawn Mining (Wa.)            | Newmont Mine Corp.     | IS (12/83) |
|                              | Midnite Mines Inc.     |            |
| Joy Mining Co. (Wa.)         |                        | LS (06/85) |
| Cotter Corp. (Co.)           | Commonwealth Edison    | IS (02/85) |
| Umetco Minerals (Co.)        | Union Carbide Corp.    | IS (11/83) |
| Maybell (Co.)                | Union Carbide Corp.    | IS         |

## FOOTNOTES:

DR = Decommissioning and Reclamation Underway  
 IS = Indefinite Shutdown  
 SS = Short-term Shutdown  
 NB = Never built  
 LS = License Suspended

SOURCE: NRC

ACTIVE URANIUM MILL  
TAILING PILE VOLUMES  
AS OF JUNE 1985

| <u>Facility</u>             | <u>Volumes Generated</u> |                   | <u>Total</u> |
|-----------------------------|--------------------------|-------------------|--------------|
|                             | <u>Federal</u>           | <u>Commercial</u> |              |
|                             | <u>Contracts</u>         | <u>Contracts</u>  |              |
| —(millions of metric tons)— |                          |                   |              |
| <u>LICENSED BY NRC</u>      |                          |                   |              |
| TVA-Edgemont                | 1.6                      | 1.6               | 3.2          |
| Umetco                      |                          | 1.4               | 1.4          |
| Atlas                       | 6.0                      | 3.6               | 9.6          |
| Plateau Resources           |                          | 0.2               | 0.2          |
| Pio Algom                   |                          | 2.7               | 2.7          |
| Exxon                       |                          | 10.0              | 10.0         |
| American Nuclear            | 2.1                      | 3.3               | 5.4          |
| Petrochemicals              | 0.7                      | 5.2               | 5.9          |
| Minerals Explor.            |                          | 3.5               | 3.5          |
| Umetco (Gas Hills)          | 2.1                      | 6.6               | 8.7          |
| Western Nuclear             | 3.4                      | 3.6               | 7.0          |
| Pathfinder (Gas Hills)      | 2.7                      | 8.0               | 10.7         |
| Pathfinder (Shirley Basin)  |                          | 6.2               | 6.2          |
| Bear Creek                  |                          | 3.7               | 3.7          |
| Silver King Mines           |                          | 0.0               | 0.0          |
| Subtotal                    | <u>18.6</u>              | <u>59.6</u>       | <u>78.2</u>  |
| <u>LICENSED BY STATES</u>   |                          |                   |              |
| Anaconda-Bluewater          | 8.8                      | 15.2              | 24.0         |
| Homestake Mining            | 11.4                     | 10.6              | 22.0         |
| Kennecott Minerals          |                          | 3.3               | 3.3          |
| Quivira Mining              | 10.0                     | 23.0              | 33.0         |
| United Nuclear Corp.        |                          | 3.6               | 3.6          |
| Bokum Resources Corp.       |                          |                   | 0.0          |
| Gulf Minerals               |                          |                   | 0.0          |
| Conoco-Pioneer Nuclear      |                          | 8.7               | 8.7          |
| Exxon Minerals Co.          |                          | 0.5               | 0.5          |
| Chevron Resources           |                          | 4.2               | 4.2          |
| Anaconda Minerals           |                          |                   | 0.0          |
| Western Nuclear Inc.        |                          | 2.3               | 2.3          |
| Dawn Mining                 | 1.1                      | 1.8               | 2.9          |
| Joy Mining Co.              |                          | 0.003             | 0.003        |
| Cotter Corp.                | 0.3                      | 2.2               | 2.5          |
| Umetco Minerals             | 5.7                      | 4.8               | 10.5         |
| Maybell                     |                          | 1.0               | 1.0          |
| Subtotal                    | <u>37.3</u>              | <u>81.2</u>       | <u>118.5</u> |
| Total                       | <u>55.9</u>              | <u>140.8</u>      | <u>196.7</u> |
| Percent of Total            | 28.4%                    | 71.6%             | 100.0%       |

ESTIMATED CLEANUP COSTS  
FOR ACTIVE URANIUM MILLS

| <u>Facility</u>                    | <u>Volume</u><br>(millions<br>of metric<br>tons) | <u>Estimated</u><br><u>Costs</u><br>(millions) | <u>Cost</u><br><u>Per Ton</u> |
|------------------------------------|--------------------------------------------------|------------------------------------------------|-------------------------------|
| <u>LICENSED BY NRC</u>             |                                                  |                                                |                               |
| TVA-Edgemont                       | 3.2                                              | \$ 27.4                                        | \$ 8.56                       |
| Umetco                             | 1.4                                              | 2.0                                            | 1.43                          |
| Atlas                              | 9.6                                              | 3.2                                            | 0.33                          |
| Plateau Resources                  | 0.2                                              | 0.5                                            | 2.50                          |
| Rio Algom                          | 2.7                                              | 3.2 <sup>a</sup>                               | 1.19                          |
| Exxon                              | 10.0                                             | 10.9 <sup>a</sup>                              | 1.09                          |
| American Nuclear                   | 5.4                                              | 3.5                                            | 0.65                          |
| Petrotomics                        | 5.9                                              | 3.4 <sup>a</sup>                               | 0.58                          |
| Minerals Explor.                   | 3.5                                              | 3.5                                            | 1.00                          |
| Umetco-Gas Hills                   | 8.7                                              | 5.9                                            | 0.68                          |
| Western Nuclear                    | 7.0                                              | 10.6                                           | 1.51                          |
| Pathfinder-Gas Hills               | 10.7                                             | 29.1 <sup>a</sup>                              | 2.72                          |
| Pathfinder-Shirley Basin           | 6.2                                              | 57.5 <sup>a</sup>                              | 9.27                          |
| Bear Creek                         | 3.7                                              | 2.6                                            | 0.70                          |
| Silver King Mines <sup>b</sup>     | 0.0                                              | -                                              | -                             |
| Subtotal                           | <u>78.2</u>                                      | <u>\$163.3</u>                                 | 2.09                          |
| <u>LICENSED BY STATES</u>          |                                                  |                                                |                               |
| Anaconda-Bluewater                 | 24.0                                             | \$ 9.6                                         | \$ 0.40                       |
| Homestake Mining                   | 22.0                                             | 5.3                                            | 0.24                          |
| Kennecott Minerals                 | 3.3                                              | 11.2                                           | 3.39                          |
| Quivira Mining                     | 33.0                                             | 9.2                                            | 0.28                          |
| United Nuclear Corp.               | 3.6                                              | 3.2                                            | 0.89                          |
| Bokum Resources Corp. <sup>b</sup> | 0.0                                              | -                                              | -                             |
| Gulf Minerals <sup>b</sup>         | 0.0                                              | -                                              | -                             |
| Conoco-Pioneer Nuclear             | 8.7                                              | 8.1                                            | 0.93                          |
| Exxon Minerals Co.                 | 0.5                                              | 3.0                                            | 6.00                          |
| Chevron Resources                  | 4.2                                              | 3.3                                            | 0.79                          |
| Anaconda Minerals <sup>b</sup>     | 0.0                                              | -                                              | -                             |
| Western Nuclear Inc.               | 2.3                                              | 6.0                                            | 2.61                          |
| Dawn Mining                        | 2.9                                              | 1.0                                            | 0.34                          |
| Joy Mining Co.                     | 0.003                                            | 0.1                                            | 33.33                         |
| Cotter Corp.                       | 2.5                                              | 10.9                                           | 4.36                          |
| Umetco Minerals                    | 10.5                                             | 31.7                                           | 3.02                          |
| Maybell                            | 1.0                                              | 1.8                                            | 1.80                          |
| Subtotal                           | <u>118.5</u>                                     | <u>\$104.4</u>                                 | 0.88                          |
| Total                              | <u>188.9</u>                                     | <u>\$267.7</u>                                 | 1.36                          |

<sup>a</sup>Cost estimate undergoing NRC review as of July 1985 and is subject to change.

<sup>b</sup>No tailings because mill was never built



URANIUM MILL OWNERS  
FINANCIAL SURETY ARRANGEMENTS  
(LICENSED BY NPC)

| <u>Facility</u>    | <u>Type of Arrangement</u> | <u>Amount</u> | <u>Issued To</u> | <u>Scope of Assurity</u>          |
|--------------------|----------------------------|---------------|------------------|-----------------------------------|
| TVA-Edgemont       | SI                         | \$ -          |                  |                                   |
| Umetco             | CG                         | \$ 4,235,830  | NRC              | Decom. and Recl.,<br>LTC          |
| Atlatz             | OG                         | \$ 5,553,700  | Utah             | Decom. and Recl.                  |
| Plateau Resources  | LC                         | \$ 1,827,601  | NPC              | Decom. and Recl.                  |
| K.O. Algom         | EA                         | \$ 535,874    | Utah             | Decom. and Recl.<br>(mine & mill) |
| Exxon              | LC                         | \$10,900,000  | Wyoming          | Decom. and Recl.                  |
| American Nuclear   | CD                         | \$ 99,727     | Wyoming          | Decom. and Recl.                  |
|                    | LC                         | \$ 500,000    |                  |                                   |
|                    | TB                         | \$ 3,481,688  |                  |                                   |
|                    | Total                      | \$ 4,081,415  |                  |                                   |
| Petrochemicals     | OG                         | \$ 1,928,859  | Wyoming          | Decom. and Recl.                  |
|                    | LC                         | \$ 1,505,000  |                  |                                   |
|                    | Total                      | \$ 3,433,859  |                  |                                   |
| Minerals Explor.   | CG                         | \$ 3,500,000  | Wyoming          | Decom. and Recl.                  |
| Umetco (Gas Hills) | SB                         | \$ 5,929,000  |                  | Decom. and Recl.                  |
| Western Nuclear    | SB                         | \$10,586,000  | Wyoming          | Decom. and Recl.                  |
| Pathfinder         | OG                         | \$21,725,200  | Wyoming          | Recl.(mine & mill)                |
| (Gas Hills)        | LC                         | \$ 7,393,850  | NRC              | Decom. and Recl.                  |
|                    | Total                      | \$29,119,050  |                  |                                   |
| Pathfinder         | OG                         | \$52,000,000  | Wyoming          | Decom. and Recl.                  |
| (Shirley Basin)    | LC                         | \$ 5,518,300  | NRC              | Decom. and Recl.                  |
|                    | Total                      | \$57,518,300  |                  |                                   |
| Bear Creek         | CG                         | \$ 3,469,600  | Wyoming          | Decom. and Recl.                  |
| Silver King Mines  | NB                         |               |                  |                                   |

## Footnotes

CD = Certificate of Deposit  
CO = Collateral  
LC = Letter of Credit  
TB = Treasury Bill  
OG = Owner Guarantee  
NB = Mill Never Built

CG = Corporate Guarantee  
SI = Self-Insured  
EA = Escrow Account  
SB = Surety Bond  
FT = Financial Test  
Decom. = Decommissioning  
Recl. = Reclamation  
LTC = Long-term care

URANIUM MILL OWNERS  
FINANCIAL SURETY ARRANGEMENTS  
(LICENSED BY STATE)

| <u>Facility</u>        | <u>Type of Arrangement</u> | <u>Amount</u> | <u>Issued To</u>       | <u>Scope of Assurity</u> |
|------------------------|----------------------------|---------------|------------------------|--------------------------|
| Anaconda-Bluewater     | SB                         | \$ 8,625,000  | New Mexico             | Reclamation LTC          |
|                        | EA                         | \$ 1,000,000  |                        |                          |
|                        | Total                      | \$ 9,625,000  |                        |                          |
| Homestake Mining       | FT                         | \$ 4,252,750  | New Mexico             | Reclamation LTC          |
|                        | EA                         | \$ 1,000,000  |                        |                          |
|                        | Total                      | \$ 5,252,750  |                        |                          |
| Kennecott Minerals     | SB                         | \$10,950,000  | New Mexico             | Reclamation LTC          |
|                        | FA                         | \$ 246,390    |                        |                          |
|                        | Total                      | \$11,196,390  |                        |                          |
| Quivira Mining         | FT                         | \$ 3,200,000  | New Mexico             | Reclamation LTC          |
|                        | EA                         | \$ 1,000,000  |                        |                          |
|                        | Total                      | \$ 4,200,000  |                        |                          |
| United Nuclear Corp.   | FT                         | \$ 2,500,000  | State                  | Reclamation LTC          |
|                        | EA                         | \$ 703,797    |                        |                          |
|                        | Total                      | \$ 3,203,797  |                        |                          |
| Bokum Resources Corp.  | NB                         | \$ -          |                        |                          |
| Gulf Minerals          | NB                         | \$ -          |                        |                          |
| Conoco-Pioneer Nuclear | OG                         | \$ 8,050,000  | Texas                  | Recl. & LTC              |
| Exxon Minerals Co.     | CG                         | \$ 3,000,000  | Texas                  | Recl. & LTC              |
| Chevron Resources      | CG                         | \$ 3,289,900  | Texas                  | Recl. & LTC              |
| Anaconda Minerals      | NB                         | \$ -          |                        |                          |
| Western Nuclear Inc.   | OG                         | \$ 6,000,000  | U.S. Dept. of Interior | Reclamation              |
| Dawn Mining            | LC                         | \$ 1,000,000  | Wash.                  | Decom. and Recl.         |
| Joy Mining Co.         | OG                         | \$ 93,000     | Wash.                  | Decom. and Recl.         |

| <u>Facility</u> | <u>Type of<br/>Arrangement</u> | <u>Amount</u> | <u>Issued<br/>To</u> | <u>Scope of<br/>Assurity</u>                |
|-----------------|--------------------------------|---------------|----------------------|---------------------------------------------|
| Cotter Corp.    | OG                             | \$10,500,000  | Colorado             | Decom. and Recl.<br>Decom. and Recl.<br>LTC |
|                 | CO                             | \$ 68,000     |                      |                                             |
|                 | EA                             | \$ 329,383    |                      |                                             |
|                 | Total                          | \$10,837,383  |                      |                                             |
| Umetco Minerals | FT                             | \$31,686,000  | Colorado             | Decom. and Recl.                            |
| Maybell         | LC                             | \$ 1,300,000  | Colorado             | Reclamation<br>LTC                          |
|                 | EA                             | \$ 490,000    |                      |                                             |
|                 | Total                          | \$ 1,790,000  |                      |                                             |

## Footnotes

CD = Certificate of Deposit  
 CO = Collateral  
 LC = Letter of Credit  
 TB = Treasury Bill  
 OG = Owner Guarantee  
 CG = Corporate Guarantee  
 SI = Self-Insured  
 EA = Escrow Account  
 SB = Surety Bond  
 FT = Financial Test  
 NB = Will Never Built

## SELECTED COMPANY 1984 FINANCIAL RESOURCES

| <u>PARENT COMPANY</u>            | <u>TOTAL<br/>ASSETS</u> | <u>TOTAL<br/>LIABILI-<br/>TIES</u> | <u>TOTAL<br/>STOCK-<br/>HOLDERS<br/>EQUITY</u> | <u>REVENUES</u> | <u>NET<br/>INCOME<br/>(Loss)</u> |
|----------------------------------|-------------------------|------------------------------------|------------------------------------------------|-----------------|----------------------------------|
| -----Billions of Dollars-----    |                         |                                    |                                                |                 |                                  |
| Exxon Corp. <sup>a</sup>         | \$63.3                  | \$34.4                             | \$28.9                                         | \$97.3          | \$ 5.5                           |
| Texaco (Getty Oil) <sup>a</sup>  | \$37.7                  | \$24.0                             | \$13.7                                         | \$47.9          | \$ 0.3                           |
| Dupont                           | \$24.1                  | \$11.9                             | \$12.2                                         | \$36.2          | \$ 1.4                           |
| Atlantic Richfield               | \$22.1                  | \$12.2                             | \$ 9.9                                         | \$25.2          | \$ 0.6                           |
| Union Carbide Corp. <sup>a</sup> | \$10.5                  | \$ 5.6                             | \$ 4.9                                         | \$ 9.5          | \$ 0.3                           |
| Union Pacific Corp. <sup>a</sup> | \$10.4                  | \$ 5.7                             | \$ 4.7                                         | \$ 7.9          | \$ 0.5                           |
| Kerr McGee Corp.                 | \$ 3.8                  | \$ 2.0                             | \$ 1.8                                         | \$ 3.5          | \$ 0.1                           |
| Phelps Dodge Corp.               | \$ 1.7                  | \$ 0.9                             | \$ 0.8                                         | \$ 0.9          | \$(0.3)                          |

MILL OWNERS

|                               |         |         |          |         |          |
|-------------------------------|---------|---------|----------|---------|----------|
| -----Millions of Dollars----- |         |         |          |         |          |
| Homestake Mining              | \$692.5 | \$135.0 | \$557.5  | \$319.7 | \$ 29.2  |
| Atlas Corp.                   | \$103.3 | \$ 19.4 | \$ 83.9  | \$ 41.5 | \$ (3.9) |
| American Nuclear              | \$ 25.5 | \$ 27.5 | \$ (2.0) | \$ 0.3  | \$(10.5) |
| Midnite Mines <sup>b</sup>    | \$ 3.5  | \$ 0.2  | \$ 3.3   | \$ 0.0  | \$(0.0)  |

<sup>a</sup>Parent company that has executed Corporate Guarantee with NRC or State.

<sup>b</sup>Midnite Mines Inc. owns 49 % of Dawn Mining Co. Newmont Mines holds the remaining 51 %.

SOURCE: Securities and Exchange Commission. (SEC Forms 10K and 10Q for calendar year 1984)

Statement of Harry M. Conger  
on Behalf of  
Uranium Producers of America

Mr. Chairman, I am Harry Conger, Chairman of the Board, President and Chief Executive Officer of Homestake Mining Company. This statement is presented on behalf of the Uranium Producers of America. Accompanying me are industry representatives who may be able to answer questions in areas with which I am not familiar. Richard Stoehr retired as senior vice president of Homestake after many years of expertise in the uranium industry. Jim Cleveland of Kerr-McGee's environmental department, and Stanley Crout, a Santa Fe lawyer, are both familiar with the history and details of uranium mill tailings regulation.

The Uranium Producers of America urge the enactment of the Uranium Mill Tailings Reclamation Act of 1985. The need for this legislation arose because EPA regulations will require expensive reclamation of uranium mill tailings largely generated years before passage of federal legislation in 1978 which occasioned the EPA regulations. Contracts entered before the passage of the Uranium Mill Tailings Radiation Control Act of 1978 did not generally anticipate large reclamation cost, and they did not generally provide for pass-throughs of the reclamation cost to the user.

This funding method reflects a basic general principle - since no large reclamation costs were anticipated before the passage of the Uranium Mill Tailings Radiation Control Act of 1978, it was not generally reflected in the contracts for the sale of uranium entered before then. It is appropriate that this unanticipated cost be shared on the basis of the proportion of tailings generated under federal and commercial contracts entered before UMTCA.

Some argue that the cost of tailings generated in the past should be paid for out of hopeful contracts for future sales. In the uranium industry, this possibility doesn't exist. Almost 100% of production for new sales is from foreign sources.

After World War II, the Atomic Energy Committee undertook to find and develop domestic uranium for our national defense. We then knew of no significant domestic reserves. Many believed we would be dependent on foreign sources. The AEC created a program to encourage private industry to locate and develop domestic uranium, which led thousands of Americans to become involved in exploration. This effort was very successful in the geologic sense, although less so in economic terms for the producers.

The AEC program involved the construction of uranium milling capacity. Only a very small portion of the uranium ore that is mined is uranium - about one-fifth of one percent. It is necessary to separate the waste rock from the uranium, and mills are required to do this.

The waste rock from the milling process is transported in a slurry form to a disposal area, called a tailings pond or pile. The AEC entered contracts with private companies to construct mills, which milled ore mined by the milling company, ore owned by the AEC and ore mined by independent producers. The AEC purchased the uranium concentrate from the mills at prices that allowed for production cost, amortization and some profit.

The AEC elaborately regulated radioactive releases from uranium mills during their operational phase.

Neither the AEC nor the producers anticipated there would be any significant reclamation cost associated with the mills or tailings. Thus, there was no allowance for any significant reclamation cost in the AEC purchase contracts. Mr. Frank McGinley, a high official with the AEC procurement program, has stated that significant reclamation costs were not anticipated, but had they been, AEC would have made an allowance for them in the purchase price of uranium.

Congress assigned the AEC with the responsibility of developing peaceful uses for atomic energy. This program led to generation of electricity by nuclear power. About 20% of our electricity will soon be generated by nuclear power.

By 1970, the AEC's uranium procurement program for defense needs ended. The commercial market was still relatively small.

A number of the mill operators decided to cease operations at the end of the AEC procurement program. These mills are called the inactive sites. Other mill operators continued, supplying the developing commercial market. The mills that continued past the demise of the AEC procurement program, and those built since, are known as the active sites. They are called active sites, even though most are no longer processing uranium ore.

When the inactive sites closed, no expensive reclamation was required or undertaken. Mill tailings were not considered a hazard. The producers which remained open for the commercial market did not anticipate expensive reclamation would be required, and contracts with customers rarely contained cost pass-throughs of the expensive reclamation EPA is now determined to require. These contracts were normally long-term.

In late 1978, Congress enacted the Uranium Mill Tailings Radiation Control Act of 1978, finding that the mills and tailings *may* constitute a hazard to health and environment. EPA was to develop generally applicable standards, and the Agreement States are to conform to the extent practicable. By 1983, EPA issued standards for inactive and active mills which will result in a very expensive reclamation.

The responsibility for reclamation at the inactive sites was assigned to the Department of Energy. Funding is 90% federal - 10% state. EPA issued regulations for the reclamation of the inactive sites in 1983, and DOE is now conducting the reclamation program. The actual engineering and construction work is contracted to private entities, such as Jacobs Engineering and Morrison-Knudson.

The proposed Uranium Mill Tailings Reclamation Act of 1985 deals with funding for the reclamation at the active sites. There are less than thirty - their locations and size are shown on the exhibit. Most are in the West, but there is one thorium processing site in Illinois. UMTRCA also included thorium sites.

The Reclamation Act provides a comprehensive funding system for reclamation at the active sites. As to tailings generated after the effective date, 100% percent of the cost is assigned to the mill owner or licensee. Contracts for future sales are to address the reclamation issue, but no formula is required.

Funding for reclamation of tailings existing now is provided in the following manner.

A. 30% of the cost is to be paid by the federal government. This is about the proportion of tailings, on a dry ton basis, at the active sites generated for sales of uranium and thorium to the federal government. This is in accordance with the General Accounting Office report to Congress which concluded:

"GAO recommends that the Congress provide assistance to active mill owners to share in the cost of cleaning up that portion of the tailings which were produced under federal contract."

The exhibit shows tailings at the active sites generated under AEC contracts.



B. 15% of the reclamation cost at each site is to be paid by the licensee or owner. This is substantially more than the proportion of tailings at the active sites generated under contracts entered after the Uranium Mill Tailings Radiation Control Act was enacted late in 1978. The exhibit shows that the tailings generated under post-1978 contracts is about 6%.

C. 55% of the reclamation cost is provided by a fee on the generation of electricity by nuclear power. This is less than the proportion of tailings at the active sites which were generated for commercial purposes under contracts entered before 1979. The fee is 0.15 of a mill per kilowatt hour. It was modelled after the 1 mill per kilowatt hour fee in the Nuclear Waste Policy Act, which deals with disposal of fuel after its use in reactors. A mill is 1/1000 of a dollar. The Reclamation Act fee is less than 1/5000 of a dollar. It represents at most a few cents per month for the average residential customer. The exhibit shows the monthly cost to a residential user.

Based upon the U.S. Energy Information Administration mid-case estimates of generation of electricity by nuclear power over the period 1985-1995, a fee of .15 mill per kilowatt hour will generate more than \$900,000,000 over this period. This exceeds 55% of some of the cost estimates of tailings reclamation we have heard. A fee of .10 mill per kilowatt hour over the same period is estimated to generate about \$600,000,000 over this period. The exhibit shows the estimated nuclear electrical generation by year, and the cumulative receipts by the fund at 0.15 and 0.10 mill rates. The bill contains provision for DOE to study the receipts and cost, and report to Congress on the results. Adjustments can then be made if appropriate.

We have also heard that some owners are large corporations, and that they should use profits, say, from the oil business to pay for reclamation of existing tailings. This would simply amount to transferring the cost of reclamation for uranium fuel to the users of oil. The environmental cost associated with uranium fuel should be borne by those that benefit from the use of that fuel.

We have also heard reference to a bail-out for the uranium industry. That is not the case. Tailings were not in the past considered a hazard if left on the site. The tailings at the active sites were generated in accordance with the laws at the time. It is certainly no bail-out to provide a funding method for application of new regulations to earlier practices.

Earlier hearings before these committees have shown our domestic uranium industry is in a drastic state of depression. Employment has dropped from some 22,000 to less than 2,000. Only about five of the 26 uranium mills in this country are running, and those are operating at greatly reduced capacity. Ore milling at Homestake's mill in New Mexico, which has operated since 1958, will be put on standby this month. This year, our domestic industry will produce less than a quarter of our national needs. A few years ago, our domestic industry produced half the free world's uranium needs.

The recent implementation of extensive and expensive reclamation requirements for tailings at our mills are important factors preventing a revival of our domestic industry. There are other factors involved, such as foreign imports supported by foreign government aid, inventory surplus resulting from slow-downs and cancellation of utility reactors, and DOE enrichment policies. We believe it essential that funding legislation for active site reclamation be enacted in order to revive a domestic uranium industry.

We also believe a revival of the domestic industry is essential for our nation's energy independence and security.

The Reclamation Act should leave intact the general standard setting system of UMRCA. The Act addresses the funding of the cost of reclamation - not the standards of reclamation. Existing law provides for standards.

The Reclamation Act provides DOE will generally be responsible for accomplishing the reclamation. DOE is performing the reclamation at the inactive sites. It contracts out many of the functions. This system will work well at the active sites. The Reclamation Act allows DOE to select a state or owner, or other entity, to do the work. This allows DOE the flexibility to use the most cost effective method. The criticism that DOE has been "too slow" at the inactive sites is mistaken. The reclamation standards were not published by EPA until 1983.

Several groups have suggested more or less technical changes to the Reclamation Act to make it more precise. Some of their comments are worthy of your consideration.

One question asked by Chairman Udall to DOE concerns what contributions, other than the 15% cash contribution, the producers might make, such as equipment, machinery, monitoring or the like, to reduce the cost to the government and consumers. We believe it makes sense to use company facilities to reduce cost. The Uranium Producers of America is preparing a list of company facilities which may be useful, and, with the Committee's permission, will submit it after the hearing, along with more detailed comments on the Reclamation Act.

Mr. Chairman, the Reclamation Act provides for funding of the reclamation at the active sites in an equitable manner. Its enactment is crucial to a domestic industry capable of contributing to our energy independence. We urge its passage.

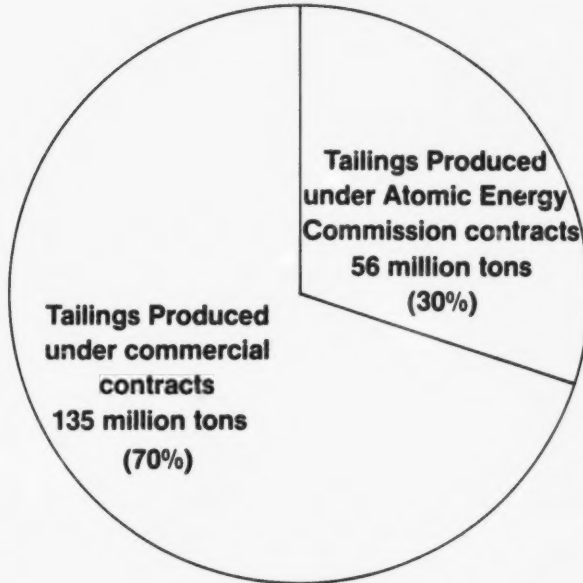
ATTACHMENT A:

**URANIUM MILL TAILINGS AT ACTIVE SITES**  
(as of July 1985)

| <u>State</u> | <u>Mill</u>          |                    | <u>Tailings</u><br>(millions of tons) |
|--------------|----------------------|--------------------|---------------------------------------|
| New Mexico   | Anaconda             | Bluewater          | 23.6                                  |
|              | Homestake            | Grants             | 21.8                                  |
|              | Qulvira              | Ambrosia Lake      | 33.0                                  |
|              | Sohio                | L-Bar              | 2.1                                   |
|              | UNC                  | Church Rock        | 3.5                                   |
|              |                      |                    | <u>84.0</u>                           |
| Wyoming      | American Nuclear     | Gas Hills          | 5.9                                   |
|              | Exxon                | Highland           | 7.2                                   |
|              | Minerals Exploration | Sweetwater         | 1.0                                   |
|              | Pathfinder           | Lucky Mc           | 9.5                                   |
|              | Pathfinder           | Shirley Basin      | 5.8                                   |
|              | Petrochemicals       | Shirley Basin      | 6.3                                   |
|              | Rocky Mountain       | Bear Creek         | 5.0                                   |
|              | Umetco               | Gas Hills          | 9.2                                   |
|              | Western Nuclear      | Split Rock         | 7.7                                   |
|              |                      |                    | <u>57.6</u>                           |
| Utah         | Atlas                | Moab               | 10.5                                  |
|              | Energy Fuels         | White Mesa         | 1.5                                   |
|              | Plateau              | Shootaring         | 0.0                                   |
|              | Rio Algom            | Lisbon             | 3.0                                   |
|              |                      |                    | <u>15.0</u>                           |
| Texas        | Chevron              | Panna Maria        | 4.6                                   |
|              | Conoco               | Conquista          | 8.8                                   |
|              | Exxon                | Felder             | 0.4                                   |
|              |                      |                    | <u>13.8</u>                           |
| Colorado     | Cotter               | Canon City         | 2.2                                   |
|              | Umetco               | Uravan             | 10.3                                  |
|              |                      |                    | <u>12.5</u>                           |
| Washington   | Dawn                 | Ford               | 3.0                                   |
|              | Western Nuclear      | Sherwood           | 2.9                                   |
|              |                      |                    | <u>5.9</u>                            |
| South Dakota | TVA                  | Edgemont           | 2.0                                   |
|              |                      |                    | <u>2.0</u>                            |
|              |                      | <b>GRAND TOTAL</b> | <u><b>190.8</b></u>                   |

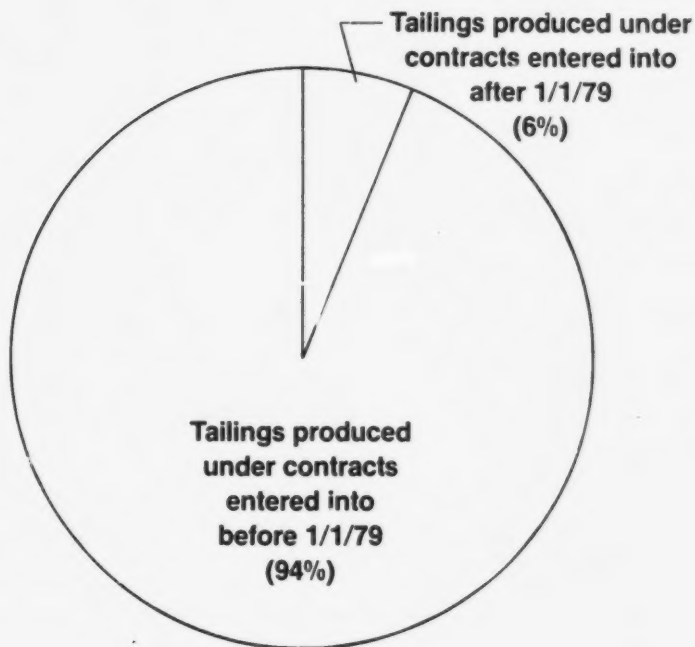
Source: UPA Survey of U.S. uranium producers (July 1985).

**ACTIVE SITES  
URANIUM MILL TAILINGS PRODUCED  
UNDER A.E.C. AND  
COMMERCIAL CONTRACTS**



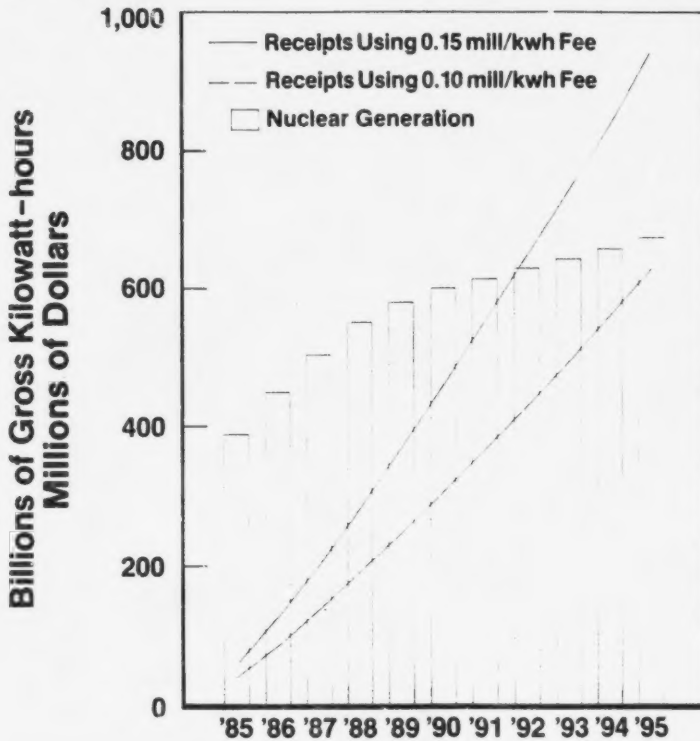
**Source: UPA Survey of U.S. uranium producers (July 1985).**

**ACTIVE SITES  
URANIUM MILL TAILINGS PRODUCED  
UNDER CONTRACTS ENTERED INTO  
AFTER ENACTMENT OF URANIUM  
MILL TAILINGS RADIATION  
CONTROL ACT OF 1978  
(as of July 1985)**



Source: UPA Survey of U.S. uranium producers (July 1985).

## ANNUAL U.S. NUCLEAR ELECTRICAL GENERATION AND CUMULATIVE URANIUM MILL TAILINGS FUND RECEIPTS



Source: U.S. Energy Info. Admn: *Annual Energy Outlook* (Jan. 1985); mid-case figures adjusted 5% to gross electrical generation.

**NATIONAL AVERAGE MONTHLY  
RESIDENTIAL COST OF A FEE ON  
NUCLEAR-GENERATED ELECTRICITY  
(average monthly usage of 708 kwh with  
20% nuclear generation)**

at 0.10 mill/kwh

at 0.15 mill/kwh

**1.4¢** per month

**2.1¢** per month

**Source: U.S. Energy Info. Admn: *Annual Energy Review*  
(April 1985).**



STATEMENT OF FRANK E. MCGINLEY  
CONSULTING METALLURGICAL ENGINEER  
GRAND JUNCTION, COLORADO

My name is Frank E. McGinley. I am a former Assistant Manager of the AEC/DOE Grand Junction Office and am currently a consulting metallurgical engineer. <sup>1/</sup>

I appreciate the opportunity to appear before this Joint Congressional Hearing regarding H.R. 2236 and S. 1004. The focus of my testimony will be on the proposed legislation insofar as it relates to so-called "commingled" or AEC-related uranium mill tailings. With your permission I would like to read my statement.

I. Overview of My Involvement

My experience with uranium mill tailings dates back to the early 1950's, when I first went to work for the Atomic Energy Commission (AEC). At that time, and for several more years, uranium mill tailings were considered no more hazardous than tailings from other mining and milling operations. Put another way, the fact that the tailings were radioactive was of no great concern. Instead, in the early days of the uranium procurement program, emphasis was on obtaining as much domestic uranium as possible for defense needs. I do not plan to trace the history of the early uranium procurement program since it is available elsewhere, but I would like to mention that through the concerted efforts of many hardworking prospectors

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<sup>1/</sup> A biographical sketch is attached as Exhibit A.

and numerous mining companies, it was immensely successful. So much so that by late 1957 the AEC announced, "it no longer is in the interest of the Government to expand production of uranium concentrates." The AEC procurement program originally was scheduled to terminate by the end of 1966, but when the private market for peaceful uses of atomic energy was not sufficient to sustain a viable domestic uranium industry, the AEC entered into its "stretch-out" program for purchases through 1970. Government procurement of uranium ended December 31, 1970.<sup>2/</sup>

During the Government's uranium procurement program (1943-1970), there was a total of 33 uranium milling locations and 9 other sites where upgraders were located. At each of these sites tailings or other radioactive residues remained at the termination of the Government's uranium procurement program. Additionally, uranium mill tailings were released by some operators for construction related uses, such as land fill, in some communities. The AEC first began to extensively regulate radioactive uranium mill waste discharges and exposure of mill workers with the promulgation of the general standards in 10 CFR 20, "Standards for Protection Against Radiation," in January 1957. This set of regulations, however, did not

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<sup>2/</sup> For a more complete description of the uranium procurement program, please see Report GJBX-220(82) "Summary History of Domestic Uranium Procurement Under U.S. Atomic Energy Commission Contracts-Final Report" by Holger Albrethsen, Jr. and Frank E. McGinley, October 1982, a copy of which is appended as Exhibit B.

require stabilization and so forth at uranium mills. Concurrently the Public Health Service surveyed various mills and published a "Waste Guide for the Uranium Milling Industry" in 1962. However, release of solid tailings by some operators did not cease until 1966 when it was discovered that the residual radium in tailings could give rise to elevated radon and radon decay products (or daughters) within buildings constructed on or adjacent to tailings fill material. The Subcommittee on Raw Materials of the Joint Committee on Atomic Energy conducted hearings on the "Use of Uranium Mill Tailings for Construction Purposes" here in Washington on October 28 & 29, 1971. Since I helped prepare the AEC testimony, I had the opportunity to be present at those hearings. Following those hearings, on June 16, 1972, P.L. 92-314 was passed which authorized the first remedial action program related to uranium mill tailings. The program provides for remedial action for properties -- as opposed to mill sites themselves -- in the vicinity of Grand Junction, Colorado. I helped establish this cooperative program with the State of Colorado and had supervisory responsibility for it until I retired in 1980.

It also was my responsibility to supervise the preparation of the reports on the status of the inactive uranium mill sites in cooperation with EPA and state officials. Those reports, plus follow-up studies by an engineering firm and the Oak Ridge National Laboratory, were followed by passage in November 1978

of P.L. 95-604, the "Uranium Mill Tailings Radiation Control Act." Title I of that Act provides for the cleanup and stabilization of tailings at 25 currently inactive uranium ore processing sites, and at vicinity properties contaminated with material derived from the sites. I helped establish the implementation of this program during the 1978-1980 period.

In 1981, I was hired as a consultant to assist the DOE and its Grand Junction Office contractor (Bendix Field Engineering Corporation) in the preparation of the "Commingled Uranium Tailings Study." I was responsible for the preparation of several of the thirteen individual site reports and for the discussion of problems regarding vicinity properties. A copy of both volumes of this report is attached as Exhibit C to my testimony.

#### II. AEC Contract Policies

I should like now to address specifically my recollection of AEC policy and contractual provisions for purchasing uranium ore and concentrates during the 1947-1970 period. As Dr. Larson noted in his testimony during the 1971 JCAE Hearings,

"The discharge of radioactive mill effluents to the environment and the accumulation of radioactive tailings at mill sites are considered by AEC to be an integral part of the milling operations. Such discharge and accumulation are regulated by the Commission during the milling operations regardless of the uranium and thorium content of the tailings. On the other hand, the transfer of these tailings would not be an integral part of the milling operations and the AEC regulatory control would depend on the uranium and thorium content of the tailings." (page 5)

In short, after the tailings were removed from a mill site, or the mill license was terminated, the AEC by and large took the position that it lacked regulatory control.

Contracts were negotiated pursuant to the Atomic Energy Acts of 1947 and 1954, which authorized the AEC to establish guaranteed prices for source materials (uranium) delivered to it within a specified time. The contracts were initially entered into for period of 5 years or more, so the milling company could amortize (and thus recover) plant costs during the contract term.

Prior to negotiating a contract with a milling company, the AEC required submission of a detailed proposal showing that the company could meet AEC requirements for an adequate ore supply, technical capability, and financial responsibility. If these requirements were met the AEC and the company negotiated a contract for the construction and operation of a processing plant or mill. The price per pound of  $U_3O_8$  in concentrate was arrived at through negotiation, with the AEC taking into account ore cost (including haulage), estimated milling cost (including plant amortization), metallurgical losses and profit. By this I mean that the Commission paid a price which was intended to reimburse for costs and, for that matter, to provide a reasonable profit, so long as the operator was reasonably efficient.

Initially and prior to May 8, 1958, the contracts required that the entire production of the mill be delivered to the AEC, limited to a maximum annual quantities. This general pattern of negotiation and contracting practice prevailed through March 31, 1962. A new program for AEC purchases subsequent to that date until December 31, 1966, established a flat price of \$8 per pound  $U_3O_8$  in concentrate. Finally, the last major change in procurement policy announced November 17, 1962, established a new program for the period January 1, 1967 through December 31, 1970. This was the "stretch-out" program which was to effect a better balance between AEC receipts and requirements and help provide for a continuing industry to supply the anticipated commercial market.<sup>3/</sup> For those operators that agreed to defer  $U_3O_8$  deliveries from the 1963-1966 period into 1967 and 1968, the AEC would purchase additional pounds  $U_3O_8$  equal to the amount deferred. The price paid for deferred  $U_3O_8$  in 1967 and 1968 was \$8 per pound and the price paid in 1969 and 1970 for  $U_3O_8$  produced from company controlled properties was based on a cost formula for the 1963-1968 period, subject to a maximum of \$6.70 per pound  $U_3O_8$ . The price paid for concentrates

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<sup>3/</sup> As noted in the "Commingled Uranium Tailings Study" report, the main objective of the AEC raw materials program was the acquisition of uranium concentrate coupled, particularly in the later stages of the program, with the objective of maintaining a domestic uranium-producing industry capable of supplying raw materials required for peaceful uses of atomic energy, primarily nuclear power production.

produced from ores purchased from independent producers was \$6.70 per pound of contained  $U_3O_8$ . Eleven companies participated in the "stretch-out" program and during the period January 1, 1963 through December 31, 1970, those companies were free to produce concentrate in excess of that the AEC was obliged to purchase, and to sell such excess to any purchaser licensed to receive it.

This summary of the AEC's concentrate program reveals that negotiated prices were used from 1947 through March 31, 1962. A flat price of \$8 per pound  $U_3O_8$  in concentrate was paid for production from April 1, 1962 to December 31, 1968. For the last two calendar years 1969 and 1970 a formula price was used based on 85 percent of allowable unit costs experienced at the mill during the 1963-1968 period, attributable to uranium, plus \$1.60 per pound  $U_3O_8$  in concentrate.

In negotiating costs for arriving at a negotiated price to be paid for  $U_3O_8$  in concentrate produced by a mill, the practice was to recognize those capital and operating costs necessary to discharge and impound the tailings (both liquid and solids). The capital costs included such items as pumps, pipe lines and earthen dams or dikes, while operating costs included labor, supplies and utilities. In some instances, especially in latter years, mill operators neutralized acidic effluents or treated them chemically to reduce the soluble radium content. In those instances, those added labor and chemical costs were recognized in arriving at the AEC purchase price.

III. Non-Recognition of Radon Hazard from Mill Tailings  
and Failure to Include Stabilization Costs

There was not to my recollection any provision in the AEC contracts that specifically recognized the costs of mill dismantling, site decontamination or tailings stabilization. Indeed, prior to 1960 there was little concern about the need to stabilize tailings, even from wind erosion. It was only after the AEC-owned mill at Monticello, Utah was shut down and tailings became subject to wind and water erosion that tailings pile grading and covering started to receive consideration. Even then AEC officials looked to the States as having regulatory responsibility over shut-down operations and encouraged States to adopt regulations to prevent the spread of tailings by wind and water erosion. Colorado assumed the leadership by proposing early in 1966 regulations calling for grading, covering with earth and in some cases planting the tailings area after a mill ceased operation. However, the seriousness of the problem of radon emanation from tailings was not recognized for several years after that, and the type of stabilization conducted by the AEC at Monticello, and as required by State regulations, would do little to diminish the radon emanation. The extensive measures currently envisioned for tailings reclamation -- which are largely associated with radon suppression -- were not conceived until well after the government contract period. Had the AEC recognized the potential radon hazard, or



that extensive measures would be required to decommission mills and stabilize tailings, the Commission, in my opinion and based on my knowledge of its practice, would have recognized for purposes of its procurement contracts, and likely defrayed, all such reasonable costs associated with AEC-related tailings.

In summary, even though there may have been some tailings stabilization practices or regulations in existence prior to the termination of the AEC uranium procurement program, I do not recall provisions in the AEC contracts to recognize stabilization costs, <sup>4/</sup> though there would have been provisions had it been realized such costs would be incurred.

#### IV. The Pending Bills

I will now turn briefly to H.R. 2234 and S. 1034. Both bills provide for the federal government to assume 30% of the costs for stabilizing existing tailings. Although I have not run the numbers, it is my understanding the 30% is roughly the proportion of AEC-related tailings to existing tailings at all active sites. The percentage at any given site would of course vary. Some may have none; others may have 50% or even 100%.

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<sup>4/</sup> The sole exception might possibly have been a few mill operators that placed dirt and/or wood chip cover over completed inactive tailings areas to prevent dried tailings from becoming air-borne by high winds. Such operating costs incurred during the period 1963-1968 could have been recognized as allowable for determining the price paid for "stretch-out" pounds of U<sub>3</sub>O<sub>8</sub> purchased in 1969-1970. The point is that there was no recognition, to my recollection, of the extensive measures now being envisioned.

Precisely how Congress provides the reimbursement seems to me a legislative matter. However, given the facts as I understand them, the 30% contribution is not an unreasonable approach for an industry-wide bill. The only alternative would presumably be a site-by-site approach.

That completes my statement, I would be glad to try to answer any questions.

EDISON ELECTRIC INSTITUTE  
 TESTIMONY BEFORE THE JOINT HEARING OF  
 SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT  
 COMMITTEE ON ENERGY AND NATURAL RESOURCES  
 UNITED STATES SENATE  
 AND  
 SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT  
 COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
 U.S. HOUSE OF REPRESENTATIVES  
 ON THE  
 URANIUM MILL TAILINGS RECLAMATION ACT OF 1985  
 JULY 16, 1985

Chairman Domenici, Chairman Udall and members of both Subcommittees, I am Sol Burstein, Vice Chairman of Wisconsin Electric Power Company and a member and past chairman of the Edison Electric Institute Nuclear Power Executive Advisory Committee. This testimony is provided on behalf of the Edison Electric Institute. We are pleased to have the opportunity to appear before you today to discuss the proposed Uranium Mill Tailings Reclamation Act of 1985 along with a brief customer view of the past experience on domestic uranium supply.

The Edison Electric Institute (EEI) is the association of the nation's investor owned electric companies. Its members serve approximately 96 percent of all customers of the

investor-owned segment of the electric utility industry and 73 percent of all ultimate electricity customers in the nation. EEI's members currently operate 76 nuclear energy units with full power operating licenses and 2 with low power licenses. EEI members will operate 24 additional units now under construction, EEI membership, therefore, has a very large interest in the future of the domestic uranium supply industry.

Wisconsin Electric Power Company (WEPCO) currently has two nuclear energy units with 994 MWe capacity in commercial operation, which in 1984 provided 33 percent of our customers needs. In support of these needs WEPCO requires about 450,000 pounds of uranium each year. These units were put in production in 1970 and 1972 and are expected to operate for at least forty years.

#### Domestic Uranium Supply

The domestic electric utility industry recognizes the advantage of having a domestic uranium supply industry as a reliable supplier for a substantial portion of its uranium requirements. Since the nuclear power industry began, the vast majority of the uranium used in the United States has been of domestic origin. A dramatic imbalance however, occurred over the past decade with the amount of uranium mined and milled far exceeding the amount required for the generation of electricity. The substantial excess of uranium production resulted in the accumulation of very large inventories, equivalent to many years

of consumption, and much larger than those anticipated or desired by either the producers or the users. This imbalance between supply and demand came about, to a large extent, because of the type of contracts offered by domestic uranium producers. These contracts, which were considered to be reasonably fair for both parties in the early 1970s, proved to be more favorable to domestic producers during the past ten years. Most contracts were long-term, take-or-pay arrangements, that, in recent years, resulted in delivery of excess uranium at escalating contract prices well above the spot market price. We believe that this situation will be behind us as excess inventories are worked off.

Domestic suppliers apparently have been unable to secure long-term contracts for future sales at price levels they consider necessary to support economical production. This has occurred even though indications are that the uranium market will begin to firm up towards the beginning of the next decade. At the hearing before Chairman Udall's Subcommittee on this subject on June 20, 1985, the domestic uranium producers claimed this is due to unfair competitive practices by foreign governments in that the operations of the foreign uranium producers are being subsidized.

As you know, electric utilities are faced with conflicting constraints. While we would prefer to have a substantial domestic uranium production capability in the United States, we cannot ignore the more favorable uranium supply contract arrangements being offered by the foreign suppliers. It is our responsibility

to keep the cost to our ratepayers as low as reasonably possible while providing a reliable supply of electricity.

#### Uranium Market History

The uranium market in the United States, began in earnest in the late 1940s, in order to supply a single customer, --- the United States Government. During the early days of uranium production, there were many small companies and individual proprietors that searched for, found and mined uranium ore, bringing the ore to a central milling facility for eventual sale to the Federal Government. With Federal Government encouragement, electric utilities developed a nuclear energy industry and as nuclear energy plants were ordered and deployed around the nation, domestic uranium suppliers began to serve the growing commercial market in the 1960s and 1970s. We all know that in the optimistic days of nuclear energy, many projections were made by the government, the nuclear equipment suppliers, and the electric utilities, calling for a very large number of nuclear energy plants to be built by the turn of the century. These plants would have required vast quantities of uranium to keep them operating over their 40 year lifetime. The high growth projections encouraged large energy supply and mineral companies to become involved and, over the years, the complexion of the domestic uranium industry changed as individual proprietors and small businesses were, for the most part, replaced by conglomerates. Also, during the mid-1970s, when domestic uranium supply companies were only willing to assure a reliable supply of

uranium under what was believed to be unreasonable contract terms, a number of electric utilities entered into self-supply arrangements. Several utilities took equity positions in uranium properties and some utilities are still involved in those activities. In spite of the ambitious nuclear energy projections prevalent in the industry as late as the mid-1970s, the overall national energy picture changed dramatically by the end of the decade. The growth in demand for electricity slowed substantially and the need for nuclear energy was cut back significantly. Many nuclear energy plants were delayed for many reasons. Present predictions show that the total installed nuclear capacity in 1985 will be approximately 85,000 megawatts, or less than one-half of the 181,000 megawatts projected in 1974. As many nuclear units were cancelled and others delayed, the production of uranium continued at a rate well in excess of consumption, and, as stated above, resulted in a very large inventory surplus.

Some have argued that the large inventory excess is the result of take-or-pay contracts for uranium enriching services between the Federal Government and utilities. While this argument is supportable when discussing the excess inventory of enriched uranium, it is only partially correct when discussing the much larger inventory of natural uranium. Uranium contracting in the mid-1970s was significantly influenced by the Federal Government's decision to offer only the inflexible Long-Term, Fixed-Commitment Enrichment Contract in 1973 and 1974. The enrichment contract "open season" in 1975 and the subsequent

availability of the Adjustable-Fixed Commitment contract in 1977 and 1978 provided a partial recognition of the changing commitments to the use of nuclear energy. Complementary adjustments to uranium supply contracts were sought by utilities to recognize the reduced uranium requirements. These efforts were, in large part, rejected by the domestic uranium supply industry. Thus, while there is a surplus of enriched uranium due to actions of the Federal Government, there is a much larger surplus of natural uranium, because of the overproduction of the domestic uranium industry and the forced delivery of uranium under contracts that favored the producers.

In the mid- 1970s, when the predictions for nuclear energy were at their highest and the future demand for uranium at its greatest, the price of uranium escalated under long-term, take-or-pay contracts, from under \$6 a pound for immediate delivery to about \$65 a pound for delivery in the early 1980s. Also, many uranium suppliers were requiring electric utilities to make advance payments or, to provide money for exploration. Today, while the spot market price is around \$15 a pound, many utilities are still taking delivery of uranium under long-term contracts signed in the days when the prices were high. In fact, the majority of domestic uranium deliveries are being made not at the \$15 per pound spot market price, but at a price in excess of \$35 per pound.



Future Uranium Supply

Contracting for uranium delivery in the future is influenced by the current spot price. The average buyer of uranium seeks contracts that provide a price for uranium in the future that reflects the spot market price at the time of delivery. The domestic supply industry has indicated that it is uneconomical to produce uranium at the current spot price. During the hearing on June 20, Mr. Robert Luke, Executive Vice-President of Kerr-McGee Corporation and President of Uranium Producers of America, noted that he believes that the domestic uranium producers could, in fact, compete with the low cost of foreign production. He indicated, however, that they are not being given a fair chance, because foreign governments are subsidizing the foreign uranium producers. Mr. Luke pointed out that the domestic uranium producers need some accommodation from the Federal Government and domestic utilities in the near term to allow them to survive until uranium market prices firm up. It is encouraging to hear Mr. Luke indicate that long-term government protection is not desired and that Kerr-McGee would not be interested in being in the business under such conditions.

Existing Uranium Mill Tailings

This brings us to the topic of stabilization of uranium mill tailings and the proposed Uranium Mill Tailings Reclamation Act of 1985. This recently introduced legislation calls for a sharing of the cost for stabilizing uranium tailings and decommissioning mills at active uranium production sites. Such

costs are proposed to be borne by electric utilities at 55 percent, the Federal Government at 30 percent and the site owners at 15 percent. This proposed legislation specifies that while the Federal Government's 30 percent share and the site owners 15 percent share will be paid in the year in which the work is performed, the utility shares would be paid much earlier by imposing a 0.15 mill per KWh fee on nuclear energy electricity generation. The monies collected from the utilities would be placed in a fund that would operate in a manner similar to the current nuclear waste fund for high level waste disposal. Future adjustments in the fee would be permitted to provide whatever funds are determined to be necessary by the Secretary of Energy. After enactment of the proposed legislation, the uranium supply industry is required to include such anticipated costs as a specific part of any sales contract for uranium. Other portions of the legislation appear to call for the Secretary of Energy to take ownership and control of any of the sites in question, thereby relieving the site owners of the responsibility for stabilization of the mill tailings, or decommissioning the mills.

The proposed fee on electricity from nuclear generation for the stabilization of mill tailings has a dramatically different flavor than the fee imposed under the Nuclear Waste Policy Act of 1982. The nuclear waste disposal fee is equitable in that it requires those who benefit from nuclear generation to pay the cost of disposing of the waste products generated, even though the disposal service is provided at a much later date. Thus, the nuclear waste disposal fee is for a service to be provided by the

Federal Government in the future and paid for when the waste is generated. The proposed mill tailings fee, however, is not equitable, because it would not necessarily be paid by persons benefitting from the uranium that was produced when the mill tailings were generated. The basic principle that the beneficiary pays for the benefits received is not preserved in the proposed legislation for mill tailings stabilization.

The Uranium Mill Tailings Reclamation Act of 1985 is designed to dovetail with the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), which was enacted to provide for the reclamation and regulation of inactive uranium mill tailings. Title I of UMTRCA calls for study and remedial actions at 25 inactive mill sites containing about 26 million tons of tailings, mostly attributable to U.S. Government uranium purchases between 1946 and 1970. UMTRCA requires that the Federal Government is to pay 90 percent of the costs and the host states pay for 10 percent. Title II of the Act authorizes the Nuclear Regulatory Commission (NRC) to require financial arrangements to be made by active licensees for mill tailings stabilization. The NRC regulations, 10 CFR Part 40, stipulate the required financial surety arrangements for eventual stabilization as a condition of licensing for active sites under Title II. Title II also requires the development of radiation standards by the Environmental Protection Agency (EPA) that would apply to mill tailing stabilization.

Statements made recently when this new legislation for mill tailings stabilization was proposed indicated its necessity,

because the original UMRCA did not provide a mechanism by which the uranium production industry could effectively finance the required mill tailings reclamation. Also, the current depressed condition of the domestic uranium production industry, as viewed by the sponsors of the legislation, made it necessary to provide outside financing for these reclamation activities.

The Edison Electric Institute is deeply concerned about this retroactive approach to provide funding for mill tailings stabilization and believes this proposed legislation is inappropriate and inequitable. Any concept of a supplier receiving supplemental payments, over and above contracted arrangements, after deliveries have been made and paid for, is inappropriate. As described earlier, during the 1970s, uranium producers were able to take advantage of the perceived supply and demand situation to obtain very favorable prices and contract terms for uranium much of which is still being delivered under long-term, take-or-pay arrangements. These favorable prices should have provided sufficient funds to uranium producers to deal with the problems of mill tailings stabilization and mill decommissioning without outside assistance. The domestic electric utilities believe that they, and their consumers, have already paid for the required environmental protection activities.

Also, our reading of the language indicates that the domestic uranium producers would be given the opportunity to "walk-away" from their responsibility for mill tailings reclamation at a very low cost. In effect, the proposed

legislation seems to discourage future domestic uranium production by making site abandonment financially attractive and may, thus, lead to the complete demise of the domestic industry. If Congress is seriously interested in retaining and supporting a domestic uranium production industry, this proposed legislation appears to be inconsistent with that interest.

The need to stabilize mill tailings has been known for an extended period. As stated previously, this was addressed by Congress with UMTRCA in 1978. This issue had been discussed for several years prior to the passage of that legislation and the extent of stabilization that is needed has been thoroughly reviewed. Special attention is needed to assure that the controlling regulations are reasonable for the protection of the health and safety of the public. Uranium mill tailings are unique and, with proper control, not a major hazard. A real potential exists for regulations to impose excessive requirements for stabilization and Congress should endeavor to avoid such excesses.

#### Funding Alternatives for Mill Tailings Stabilization

NRC regulations that implement UMTRCA require surety arrangements by uranium producers to assure that funds are available for eventual stabilization of the active mill tailing sites. These regulations have resulted in surety arrangements equivalent to nearly \$250 million. Such funds should be available in the event that producers are unable to take care of their tailings.

Responsible ownership of the active sites lies with some of the largest mineral and energy conglomerates in the world. Companies like Atlantic Richfield, Atlas Corporation, Chevron, COGEMA, Dupont, Exxon, Homestake, Kerr-McGee, Phelps Dodge, Rio Algom, Sohio, Texaco, Union Carbide, Union Oil and Union Pacific Railroad have benefitted from the sale of uranium that resulted in generation of mill tailings, and it is their responsibility to address the environmental requirements placed on them by regulations under UMTECA.

The proposed new legislation appears to be unnecessary and in its current form does not provide for an equitable distribution of funding responsibility. It seeks to obtain funding on a basis that is purported to represent the share of uranium deliveries made to each category of end users during the years of concern. It does not recognize the fact that, during the 1968-1984 period, 12 percent of domestic production was exported. Also, responsibility of the host states, many of which benefitted from uranium production in one form or another, is not included. Furthermore, the proposal is structured in a completely open-ended way that provides essentially no incentive to those responsible for the work to proceed in an efficient and cost-effective manner. Such a program may never come to an end. Electricity customers would be exposed to an unending charge that could easily exceed one billion dollars.

Summary

The electric utility industry is willing to cooperate with Congress and with the domestic uranium production industry in trying to resolve the problems facing a future domestic uranium production industry. Uranium mining and milling costs, foreign competition and perhaps unfair foreign trade practices are problems that must be faced in addressing the future of the domestic industry. However, that future is quite separate from the question on funding for the stabilization of mill tailings that were produced in the past. The funding for reclamation of existing mill tailings should not be resolved with a tax on electricity customers who do not benefit from its generation. Funding for these activities should properly come from those who benefitted from the original production.

We thank you for the opportunity to come before this joint hearing and present our views on the subject as uranium consumers and express our willingness to seek equitable resolutions to the difficult problems confronting the future of the domestic uranium supply industry.

\* \* \*

PRE-HEARING QUESTIONS AND ANSWERS  
RELATING TO THE  
JULY 16, 1985 HEARING ON  
H.R. 2236 AND S. 1004: FINANCING REMEDIAL ACTIONS  
AT ACTIVE URANIUM AND THORIUM PROCESSING SITES  
BEFORE THE  
HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT  
AND THE  
SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES  
SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT  
WITNESS: JAMES W. VAUGHAN, JR.  
ACTING ASSISTANT SECRETARY FOR NUCLEAR ENERGY  
U.S. DEPARTMENT OF ENERGY

QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

Question 1(a): Please supply the Committee with a list of all inactive sites which are targeted for cleanup under the Uranium Mill Tailings Radiation Control Act, an estimate of the amount of tailings present at these sites and the degree of contamination to adjacent properties, and a projection of the reclamation cost per site.

Answer: This information is contained on the attached chart. We have only been able to quantify our estimate of the degree of contamination to adjacent properties in terms of the total number of properties. An estimate of the degree of contamination would not be available until radiological surveys are completed at each vicinity property.



## TITLE I SITES TARGETED FOR CLEANUP

| Site                 | Tailings<br>(Millions of Tons) | Designated<br>Number of<br>Adjacent<br>Properties | Estimated<br>Maximum Cost<br>\$000 |
|----------------------|--------------------------------|---------------------------------------------------|------------------------------------|
| Canonsburg, PA       | .414                           | 111                                               | \$ 46,810                          |
| Salt Lake City, UT   | 1.860                          | 127                                               | 95,599                             |
| Shiprock, NM         | 1.500                          | 17                                                | 22,032                             |
| Durango, CO          | 1.555                          | 137                                               | 57,853                             |
| Gunnison, CO         | .540                           | 14                                                | 33,068                             |
| Grand Junction, CO   | 1.900                          | 6,905                                             | 302,212                            |
| Rifle, CO (2)**      | 3.050                          | 384                                               | 61,325                             |
| Riverton, WY         | .900                           | 50                                                | 34,689                             |
| Tuba City, AZ        | .860                           | 8                                                 | 18,395                             |
| Mexican Hat, UT      | 2.200                          | 21                                                | 29,679                             |
| Lakeview, OR         | .130                           | 4                                                 | 24,332                             |
| Ambrosia Lake, NM    | 2.600                          | 0                                                 | 27,212                             |
| Naturita, CO         | .344                           | 60                                                | 16,684                             |
| Falls City, TX       | 2.500                          | 20                                                | 36,091                             |
| Green River, UT      | .123                           | 29                                                | 21,651                             |
| Slick Rock, CO (2)** | .387                           | 4                                                 | 26,676                             |
| Belfield, ND         | .050                           | 11                                                | 16,314                             |
| Bowman, ND           | .071                           | 3                                                 | 5,171                              |
| Maybell, CO          | 2.600                          | 0                                                 | 21,860                             |
| Lowman, ID           | .090                           | 17                                                | 12,269                             |
| Spook, WY            | .167                           | 1                                                 | 10,341                             |
| Monument Valley, AZ  | 1.100                          | 17                                                | 14,824                             |
| Edgemont, SD         | *                              | 213*                                              | 6,862                              |
| TOTALS               | 24.921                         | 8156                                              | \$ 944,239                         |

\* Vicinity property cleanup only.

\*\* Two piles at these sites.

## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

**Question 1(b):** Please supply the Committee with a list of all the active sites that would be eligible for cleanup under the provisions of H.R. 2236 and S. 1004, an estimate of the amount of tailings at these sites and the degree of contamination to adjacent properties, and a projection of the reclamation cost per site.

**Answer:** H. R. 2236 and S. 1004 would make eligible for cleanup all thorium or uranium processing sites active on or after January 1, 1978. This would include mill tailings sites licensed under Title II of the Uranium Mill Tailings Radiation Control Act of 1978, all uranium mill tailing sites that are licensed in the future, plus thorium processing sites that either exist now or are licensed in the future. DOE has information only for the Title II mill tailings sites. No estimates are available of the degree of contamination of adjacent (vicinity) properties.

Based on the cost of remediation at inactive Title I sites and estimates of the quantity of active tailings, DOE estimates the total cost of remedial action to EPA standards for active Title II sites to exceed \$4 billion, exclusive of costs for vicinity property remediation. Although the extent of the vicinity property problem associated with the active sites is not fully known, it should be less than that associated with the inactive UMTRA Title I sites. DOE's share, based on the 30 percent formula, would be \$1.3 billion.

## TITLE 11 URANIUM MILL SITES

| <u>Sites</u>          | <u>Location</u>       | <u>Tailings<br/>Inventory<br/>(Millions<br/>of Tons)</u> | <u>Estimated<br/>Cost<br/>(\$ in Millions)</u> |
|-----------------------|-----------------------|----------------------------------------------------------|------------------------------------------------|
| Exxon Highland        | Converse County, WY   | 8                                                        | \$ 200                                         |
| Federal AM Partners   | Gas Hills, WY         | 6                                                        | 150                                            |
| Lucky Mc Pathfinder   | Gas Hills, WY         | 9.5                                                      | 237                                            |
| Petrotomice           | Shirley Basin, WY     | 5.5                                                      | 137                                            |
| S. B. Pathfinder      | Shirley Basin, WY     | 5                                                        | 125                                            |
| Union Carbide         | Gas Hills, WY         | 8                                                        | 200                                            |
| Western Nuclear       | Jeffrey City, WY      | 7.7                                                      | 192                                            |
| Bear Creek            | Converse County, WY   | 4                                                        | 100                                            |
| Minerals Exploration  | Sweetwater County, WY | 0.3                                                      | 75                                             |
| Atlas Minerals        | Moab, UT              | 10.2                                                     | 255                                            |
| Rio Algom             | La Sal, UT            | 2                                                        | 50                                             |
| White Mesa            | Blanding, UT          | 0.5                                                      | 12                                             |
| Anaconda              | Grants, NM            | 23.6                                                     | 590                                            |
| Homestake             | Grants, NM            | 21.2                                                     | 530                                            |
| Kerr McGee            | Grants, NM            | 30.4                                                     | 760                                            |
| Sohio                 | Cebayta, NM           | 4                                                        | 100                                            |
| Cotter                | Canon City, CO        | 1.9                                                      | 48                                             |
| Union Carbide         | Uravan, CO            | 9.9                                                      | 247                                            |
| Dawn                  | Ford, WA              | 3                                                        | 75                                             |
| West Nuclear Sherwood | Ford, WA              | 1.5                                                      | 37                                             |
| Conquista             | Falls City, TX        | 7.8                                                      | 195                                            |
| Chevron               | Panna Maria, TX       | 3.2                                                      | 80                                             |
| TOTALS                |                       | 173.2                                                    | \$ 4,395                                       |

## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

**Question 2:** Would a Federal program for the cleanup of active tailings sites (such as that envisioned by H.R. 2236 and S. 1004) be more expensive than an industry cleanup under existing law?

**Answer:** The Federal program proposed by H.R. 2236 and S. 1004 would be more expensive than remedial action carried out by industry under existing law. The proposed program would require establishment within DOE of an organization to collect and manage the Mill Tailings Fund. Based on our experience in managing the Nuclear Waste Fund, we estimate that 30-40 Federal employees would be required to administer the Mill Tailings Fund. A Federally managed program also would require the establishment and control of a very large number of management interfaces. Formal contracts and management relations would be required to be established and maintained by DOE with each nuclear utility, each site owner, each affected State or Indian Tribe, and each contractor selected for project support or remedial action. In addition, DOE would have to operate in a licensee relationship with NRC. Based on our experience in administering the Title I program, this extremely complicated management structure would very likely lead to significant increases in project costs and schedules and great difficulty in controlling either.

Answer 2  
(continued):

Other factors that could lead to higher costs under Federal management would be the possibility of having to pay Davis-Bacon wage rates and the complications introduced by the Federal procurement process.

QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

**Question 3:** In determining the costs of mill tailings reclamation, what factors account for variances in the cost per cubic foot or the cost per pound from site to site?

**Answer:** On the UHTRA Title I project, the single greatest cost variation has been the need to relocate tailings piles in order to meet EPA standards for long term stability against erosion and to protect water resources. Unexpected increases in the volume of tailings due to leaching into the sub-soil is another significant cost variation.

## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

Question 4(a): H.R. 2236 and S. 1004 call for the mining companies to make a 15% contribution to the cost of reclamation activities. In addition to a cash contribution, what contributions could mining companies make (i.e., monitoring, providing temporary shelters, equipment and machinery, etc.) that would minimize the cost to the Federal Government and the ratepayers by utilizing existing infrastructures to the greatest extent possible?

Answer: Although contributions of equipment and machinery could be made by mining companies to assist the remedial action effort, it is not expected these would significantly reduce the total cost of the cleanup effort. In addition, Federal procurement regulations may complicate or exclude such contributions, if the project were to be Federally managed.

QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

Question 4(b): To what extent can the existing infrastructure relating to the Department of Energy's reclamation activities at inactive mill tailings sites help to reduce the cost of such a Federal program?

Answer: It does not seem likely under the Competition in Contracting Act that significant portions of the Title II remediation effort could be done by the existing contractors without open competition, unless legislation provided an exception. Case-by-case analysis and lengthy negotiations would be required and might adversely affect the present Firm Fixed Price contracting practice for UMTRA. Administration of contracts combining resources from different contracts or interfacing different contractors on the same work sites would be difficult and inefficient.



## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

Question 5: How much money will be generated by the .15 mil per kilowatt-hour fee required by the legislation?

Answer: The following estimates are based on a June 5, 1985, Energy Information Administration forecast:

| <u>Calendar<br/>Year</u> | <u>KW/hr<br/>(Billions)</u> | <u>Dollars<br/>Generated<br/>(Millions)</u> |
|--------------------------|-----------------------------|---------------------------------------------|
| 1984                     | 340                         | \$ 51                                       |
| 1985                     | 378                         | 56                                          |
| 1986                     | 426                         | 64                                          |
| 1987                     | 485                         | 72                                          |
| 1988                     | 526                         | 78                                          |
| 1989                     | 558                         | 83                                          |
| 1990                     | 582                         | 87                                          |
| 1991                     | 599                         | 90                                          |

## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

**Question 6:** How long would a Federal cleanup of these sites take?

**Answer:** For the Title II mill tailings sites, rough estimates can be made based on our experience in the remediation of Title I sites.

We estimate that cleanup of licensed uranium and thorium processing sites could take considerably longer than the 7 years authorized by Congress for the remediation of Title I sites. This is because of (1) the requirement in both H.R. 2236 and S. 1004 to establish the Uranium Mill Tailings Fund; (2) the time needed to enter into contracts for cleanup of the Title II sites in accordance with Federal acquisition and procurement regulations; (3) the greater volume of tailings involved; (4) uncertainties associated with annual appropriations; and (5) uncertainties concerning the total number of sites to be covered by the Title II program. A precise estimate of the length of time required for Federal cleanup of these active sites is not possible at this time.

## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

Question 7(a): What are the implications of the bills' requirement that the site licenses and titles be transferred to the Department?

Answer: Under both the House and Senate bills, the NRC would be given the authority to regulate the performance of reclamation by DOE at Title II sites once the outstanding licenses and title to the by-product material are transferred to DOE.

The exact implications of this are uncertain. On one hand, DOE might be required to carry out a reclamation plan previously prepared by the licensee and approved by the NRC. On the other hand, the Act specifies that DOE select and perform remedial action which suggests it should prepare and execute its own plan, presumably based on its UMTRA experience. In either case, DOE could be considered subject to the same NRC regulatory authority as the previous licensee, including approval of actions by DOE and enforcement of existing license conditions and Commission regulations. This would go even beyond the current DOE/NRC relationship under UMTRA, where NRC concurs on DOE Remedial Action Plans and licenses the final disposal site.

DOE believes a simpler approach is needed to avoid large uncertainties in the cost and time required to carry out the program. Maintaining the existing NRC relationship with its licensees, with private rather Federal management of the tailings cleanup, would eliminate many of these difficulties.

## QUESTIONS FROM CHAIRMAN MORRIS K. UDALL

Question 7(b): What are the implications in the event the site is licensed by an NRC agreement state?

Answer: The transfer of an Agreement State license to DOE would result in a loss of licensing regulatory jurisdiction by the Agreement State. DOE nuclear activities carried out under the Atomic Energy Act of 1954, as amended, are exempt from NRC licensing and regulation except where another statute expressly subjects an activity to NRC licensing. Both the House and Senate bills would extend NRC's jurisdiction to active uranium and thorium processing sites subject to remediation by the Department.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

July 15, 1985

The Honorable Morris K. Udall, Chairman  
Committee on Interior & Insular Affairs  
United States House of Representatives  
Washington, D. C. 20515

Dear Mr. Chairman:

Your letter of June 26, 1985 included questions regarding recently introduced legislation concerning cleanup of active uranium and thorium processing sites. Responses to those questions are enclosed.

Based on our preliminary review of the bills (H.R. 2236 and S. 1004), we are unsure of the implications of several aspects of the legislation; for example, Section 3(e) regarding the transfer of Agreement State and NRC licenses to the Department of Energy. We are proceeding to finalize our review of the legislation and will promptly forward our comments to you when available.

Sincerely,

Thomas M. Roberts  
Acting Chairman

Enclosure:  
As Stated

cc: Rep. Manuel Lujan

QUESTION 1A. Please provide a list of all active processing sites that would be eligible for cleanup under the provisions of H.R. 2236 or S. 1004, and a list of the appropriate licensees.

- B. Which of these sites are licensed by the Commission? Which are licensed by NRC agreement states?
- C. What is the current status of NRC issued licenses and agreement state issued licenses at these sites?

ANSWER.

Information requested under parts A, B and C of Question 1 regarding current uranium milling licensees is summarized in the following table. Detailed information on these subjects is in Attachment A to these questions. (This information was provided by NRC to representatives of the General Accounting Office during a meeting held on June 27, 1985.)

TABLE 1  
CURRENT STATUS OF LICENSED URANIUM MILLS

|                                                          | CO* | NM* | SD | TX* | UT | WA* | WY | TOTAL |
|----------------------------------------------------------|-----|-----|----|-----|----|-----|----|-------|
| OPERATING MILLS, NO LICENSEE<br>ANNOUNCED SHUTDOWN PLANS |     |     |    |     |    |     | 2  | 2     |
| OPERATING MILLS, LICENSEE<br>ANNOUNCED SHUTDOWN PLANNED  |     |     |    |     | 1  |     |    | 1     |
| MILLS SHUTDOWN, LICENSEE<br>ANNOUNCED RESTART PLANS      | 1   |     |    |     |    | 1   | 1  | 3     |
| MILLS SHUTDOWN, RESTART UNCERTAIN                        | 1   | 5   |    | 1   | 3  | 2   | 4  | 16    |
| MILLS SHUTDOWN, DECOMMISSIONING<br>PLANNED OR UNDERWAY   |     |     | 1  | 2   |    |     | 2  | 5     |
| TOTAL                                                    | 2   | 5   | 1  | 3   | 4  | 3   | 9  | 27    |

\*Agreement States

QUESTION 10. What, if any, surety arrangements have been made with regard to licensees' cleanup of the tailings, and what other obligations do licensees have concerning these sites?

ANSWER.

Thirteen NRC-licensed mills have surety arrangements in place. The fourteenth mill is the TVA Edgemont mill. TVA is a Federal agency and as a matter of law and government policy is not required to have any financial assurance for its actions. In virtually all situations these surety arrangements have been consolidated with state agency requirements. The types of arrangements in place are listed below:

|                         |                                      |
|-------------------------|--------------------------------------|
| Corporate Guarantee     | 5 mills (1 approved, 4 under review) |
| Letter of Credit        | 4 mills                              |
| Surety Bond             | 2 mills                              |
| Escrow Fund             | 1 mill                               |
| Cash & Letter of Credit | 1 mill                               |

With respect to Agreement State-licensed mills, all 13 mills have surety arrangements in place. The types of arrangements are listed below:

|                     |         |
|---------------------|---------|
| Corporate Guarantee | 5 mills |
| Letter of Credit    | 1 mill  |
| Surety Bond         | 6 mills |
| Personal Bond       | 1 mill  |

Of those NRC regulated mills proposing corporate guarantees, only 1 has been approved by NRC, and the remainder are under review at this time. Site-specific detail is provided in Attachment A to these questions.

As far as other NRC requirements are concerned, NRC licensees are required to provide NRC with a preliminary decommissioning and reclamation plan. During the active life of milling operations, licensees are required to implement interim stabilization measures to control tailings, to conduct comprehensive environmental monitoring programs and, where warranted, to institute remedial action programs to control ground-water contamination from tailings impoundments. Prior to undertaking decommissioning and reclamation, the licensee must submit a final decommissioning and reclamation plan for NRC review and approval in the form of a license amendment.

In addition to NRC requirements, licensees incur additional obligations as a result of state requirements for disturbed land reclamation, maintenance of ground-water resources, etc. Similar obligations are binding upon Agreement State licensees.

QUESTION 2. In the event that a site is owned or licensed to a company's subsidiary, what are the liabilities of the parent company with regard to the subsidiary's activities?

ANSWER.

It is the normal practice of the NPC to hold the licensee responsible for the full and complete performance of all regulatory requirements applicable to its activities. Occasionally a parent company will undertake to support the activities of a subsidiary for carrying out decommissioning and reclamation activities. In these cases the obligation of the parent company is documented in a legally enforceable form and becomes a condition of the license of the subsidiary.



QUESTION 3A. S.1004 and H.R.2236 call for the transfer of processing site licenses to the Department of Energy. What would be the Commission's role in regulating a DOE site licensed to the DOE?

ANSWER.

From the wording of Question 3A and the bills, there is some question pertaining to NRC's role under these bills. However, the current NRC reading of the bills is that NRC would be given licensing authority over DOE for the active mill site following transfer to DOE. Assuming this is the intent, it would be useful to place in the bills an exemption for the Commission from the requirement of Section 184 of the Atomic Energy Act that the Commission give its written consent to the transfer after making a finding that the transfer is in accordance with the Act. The Commission's role in regulating a DOE site licensed to the DOE would be to insure that DOE implements the reclamation and decommissioning program to meet applicable regulations of the NRC and EPA, and maintaining the site in a safe manner thereafter. The Commission observes that it already has authority to license and regulate the activities of DOE as custodial agency of reclaimed and closed tailings disposal areas. This authority is granted in Section 104 of the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 as to Title I sites and in Sections 202 and 205 for Title II sites (see Sections 83b(5) and 84 of the Atomic Energy Act of 1954, as amended). The current bills would increase that authority with respect to the performance of reclamation by DOE at Title II sites by transferring the outstanding licenses to DOE.

QUESTION 3B. What would be the implications of such a transfer in the event the site is licensed by an NRC agreement state?

ANSWER.

The transfer of an Agreement State license to DOE would result in a loss of licensing and regulatory jurisdiction by the Agreement State. Generally all Federal agency activities involving Atomic Energy Act materials (i.e., source, byproduct, and special nuclear material) are subject to regulation by the Nuclear Regulatory Commission (see 10 CFR 150.10). However, because DOE is not a person under the Atomic Energy Act with respect to its nuclear activities, the Atomic Energy Act activities of DOE are exempt from licensing and regulation except where another statute expressly subjects an activity to NRC licensing jurisdiction. Such statutes presently include the Energy Reorganization Act, Uranium Mill Tailings Radiation Control Act and the Nuclear Waste Policy Act. The present proposed legislation would extend NRC's jurisdiction as noted in the answer to Question 3A. However, the legislation does not address how the Agreement State's authority would be terminated and NRC would assert its authority. It is assumed in the absence of any specific statutory instruction to the contrary that the transfer of the license itself would effect the change in jurisdiction.

QUESTION 3C. How would the NRC make certain that sites are not poorly managed between the time that such legislation is passed and the time that licenses are transferred to the Department and/or the appropriate time to undertake reclamation activities?

ANSWER:

The NRC would continue to enforce the existing licenses. The NRC would continue to ensure that the licensee comply with requirements of the license and regulations through its program of inspection and enforcement.

QUESTION 3D. What effect, if any, does the NRC believe that Section 83c of the Atomic Energy Act will have in insuring that reclamation standards are ultimately complied with by licensees, assuming the site was regulated by an agreement state and that no additional legislation (such as H.R. 2236 and S. 1004) is passed by Congress? In the event the site is regulated by NRC?

ANSWER.

Section 83c of the Atomic Energy Act requires the Commission to determine upon the termination of a license to which Section 83 applies that the licensee has complied with all applicable standards and requirements. This determination applies to both Agreement State and NRC mill licensees. Section 83a requires that licenses contain conditions to assure that the licensee will comply with reclamation standards prescribed by the Commission. Section 274a mandates that an Agreement State require compliance with standards that are equivalent to, to the extent practicable, or more stringent than Commission standards. Thus, Section 83c ought to insure that reclamation standards are met by both Agreement State and NRC licensees.

QUESTION 4. In determining the cost of mill tailings reclamation, what factors would account for variances in cost per cubic foot or cost per pound from site to site?

ANSWER.

The determination of costs for reclaiming a particular impoundment are very site-specific. Examples of factors responsible for differences in unit cost of reclaiming tailings impoundments are as follows:

- a. Method of reclamation (i.e., stabilization in place or relocation of tails);
- b. Site characteristics affecting reclamation plans (i.e., extent of upstream drainage areas, proximity to natural water courses, severity of climatic conditions, etc.); and
- c. Areal extent of tailings, which affects the volume of cover materials required and erosion protection.

QUESTION 5. What is the NRC's estimate of how long an industry-funded cleanup of mill tailings sites will take under the current legislative framework?

ANSWER.

The time required for reclamation of a particular tailings disposal site is estimated by NRC to range from 3 to 10 years, depending on characteristics of the tailings disposal system. It is difficult to estimate the time in which an industry-funded cleanup of mill tailings sites under the current legislative framework would be completed because the Commission has no reliable information on when individual mill reclamation efforts might begin.

QUESTION 6A. Is it the NRC's view that these active sites will be abandoned without legislation such as what is proposed by H.R. 2236 and S. 1C04?

ANSWER.

Abandonment of active sites implies that the licensee is unable to reclaim and is willing to risk civil and criminal penalties under the Atomic Energy Act. As the response to Question 1 indicates, NRC has taken steps to require that licensees provide financial assurance that decommissioning and reclamation will take place. However, there are uncertainties inherent in any financial assurance mechanism.

QUESTION 6B. If sites are not cleaned up through any other mechanism, is it the NRC's view that reclamation can take place under the Superfund program?

ANSWER.

It is the NRC's understanding of the Superfund program that it may be used to prevent or clean up the effects of a release or threatened release of hazardous substances. Radioactive material is a hazardous material generally under Superfund. The only exclusions are uranium mill tailings sites being reclaimed under Title I of UMTCA and releases from facilities covered by the program under Section 170 of the Atomic Energy Act (AEA) as amended (Price-Anderson). Accordingly, in theory at least, Superfund is legally available to effect reclamation of uranium mill tailings sites not under the UMTCA Title I program. Whether or not Superfund would be used for this purpose lies primarily in the discretion of the Environmental Protection Agency (EPA).

EPA has stated that, as a policy matter, it has chosen not to list on the National Priority List (NPL) those facilities with a source, byproduct, or special nuclear material license issued by the NRC on the grounds that the NRC has full authority to require cleanup of releases from such facilities.

With respect to facilities licensed by a State having an agreement with NRC pursuant to 274b of the AEA, EPA has noted that although the licensing State may be able to ensure cleanup, EPA has decided to list such sites on the NPL to provide potential Federal authorities, if necessary. Since listing on the NPL does not determine whether actual cleanup action will be taken, EPA will be able to defer to the licensing State whenever EPA determines that State efforts are adequate to address the problem (see 48 FR 40658, September 8, 1983).



STATUS OF CONVENTIONAL URANIUM MILLS LICENSED BY NRC

| Facility                      | License No. | Date of<br>Initial<br>Issuance | Date of<br>Last<br>Renewal | Date<br>License<br>Expires | Mill<br>Operating<br>Status * | Mill<br>Tailings<br>Volumes**** | Parent Company          |
|-------------------------------|-------------|--------------------------------|----------------------------|----------------------------|-------------------------------|---------------------------------|-------------------------|
| American Nuclear              | SUA-667     | 1959                           | 00/71                      | 01/76**                    | IS(04/84)                     | 5.9 (2.1/3.8)                   | American Nuclear Corp.  |
| Atlas                         | SUA-917     | 1956                           | 04/79                      | 06/84**                    | IS( 4/84)                     | 10.2 (6.0/4.2)                  | Atlas Corp.             |
| Bear Creek                    | SUA-1310    | 1977                           | 09/84                      | 09/89                      | OP                            | 4.0                             | Union Pacific Corp.     |
| Exxon                         | SUA-1139    | 1972                           | 12/81                      | 12/86                      | DR(06/84)                     | 8.0                             | Exxon Corp.             |
| Minerals Explor.              | SUA-1350    | 1979                           | 02/79                      | 05/84**                    | IS(11/81)                     | 2.5                             | Union Oil Co.           |
| Pathfinder<br>(Gas Hills)     | SUA-672     | 1958                           | 09/84                      | 09/89                      | SS(04/85)                     | 9.5 (2.7/6.8)                   | Cogema (French company) |
| Pathfinder<br>(Shirley Basin) | SUA-442     | 1971                           | 09/84                      | 09/90                      | OP                            | 5.0                             | Cogema (French company) |
| Pefrotomics                   | SUA-551     | 1962                           | 10/84                      | 09/90                      | DR(05/85)                     | 5.5 (0.7/4.8)                   | Texaco (Getty Oil)      |
| Plateau Resources             | SUA-1371    | 1979                           | 09/79                      | 12/84**                    | IS(08/82)                     | 1.0                             | Consumers Power Co.     |
| Rio Algom                     | SUA-1119    | 1972                           | 09/84                      | 09/89                      | OP                            | 2.0                             | Rio Algom Ltd. (Canada) |
| Silver King Mines             | SUA-1356    | 1979                           | 09/84                      | 09/89                      | NB                            |                                 | Tennessee Valley Auth.  |
| TVA (Edgemont)                | SUA-816     |                                | 04/83                      | ***                        | DR(04/83)                     | 2.0 (1.6/0.4)                   | Tennessee Valley Auth.  |
| Umetco (Gas Hills)            | SUA-648     | 1960                           | 01/81                      | 01/86                      | IS(11/84)                     | 7.3 (2.1/5.2)                   | Union Carbide Corp.     |
| Umetco (EFN)                  | SUA-1358    | 1979                           | 08/79                      | 01/85**                    | IS                            | 1.0                             | Union Carbide Corp.     |
| Western Nuclear               | SUA-56      | 1957                           | 12/80                      | 12/85                      | IS(06/81)                     | 7.7 (3.4/4.3)                   | Phelps Dodge Corp.      |

\* IS - Indefinite Shutdown  
OP - Operating  
SS - Short-term Shutdown

DR - Decommissioning Reclamation  
NB - Never Built

\*\* Under timely renewal

\*\*\* License is effective until decommissioning and reclamation is completed.

\*\*\*\* Volumes are in 10<sup>6</sup> metric tons - Total (AEC/Private)

## FINANCIAL ASSURANCE ARRANGEMENTS FOR MILLS LICENSED BY NRC

| <u>Facility</u>                                          | <u>Type</u>                 | <u>Amount***</u>               | <u>Issued To</u> | <u>NRC Review Date</u> | <u>Purpose****</u>                                       | <u>Actions Still Outstanding</u>   |
|----------------------------------------------------------|-----------------------------|--------------------------------|------------------|------------------------|----------------------------------------------------------|------------------------------------|
| Atlas Minerals<br>Moab, Utah                             | Self*<br>Bond               | 5,553,700                      | Utah             | 9/1984                 | Decommissioning<br>and Reclamation                       | NRC approved bond<br>amounts only. |
| Bear Creek<br>Uranium Co.<br>Converse County,<br>Wyoming | Self*<br>Bond               | 3,469,600<br>(43,652,000)      | Wyoming          | 7/1984                 | Decommissioning<br>and Reclamation                       | NRC approved bond<br>amounts only. |
| Umetco<br>Blanding, Utah                                 | Corpo-<br>rate<br>Guarantee | 4,235,830                      | NRC              | 12/1984                | Decommissioning<br>Reclamation and<br>and long term care | NRC approved for 1 yr.<br>only.    |
| Exxon Minerals<br>Converse County,<br>Wyoming            | Letter<br>of<br>Credit      | 10,900,000<br>(18,000,000)     | Wyoming          | 11/1983<br>2/1985      | Decommissioning<br>and Reclamation                       | Reviewed annually                  |
| American Nuclear<br>Gas Hills, Wyoming                   | CD**<br>LC<br>TB            | 99,727<br>500,000<br>3,481,688 | Wyoming          |                        | Decommissioning<br>and Reclamation                       |                                    |
| Minerals<br>Exploration<br>Sweetwater County,<br>Wyoming | Self*<br>Bond               | 3,500,000<br>(23,763,000)      | Wyoming          | 6/1985                 | Decommissioning<br>and Reclamation                       | NRC approved bond<br>amounts only. |
| Pathfinder Mines<br>Gas Hills, Wyoming                   | Self*<br>Bond               | 21,725,200                     | Wyoming          |                        | Reclaim mine,<br>Decommissioning and<br>Reclamation      |                                    |
|                                                          | Letter<br>of Credit         | 7,393,850                      | NRC              | 12/1984                | Decommissioning<br>and Reclamation                       |                                    |

\* State has approved the self bond but still  
pending with NRC

\*\* CD - Certificate of Deposit LC - Letter of Credit TB - Treasury Bill

\*\*\* Amounts in parentheses are total financial surety amounts. Amount estimates  
do not include the time value of money.

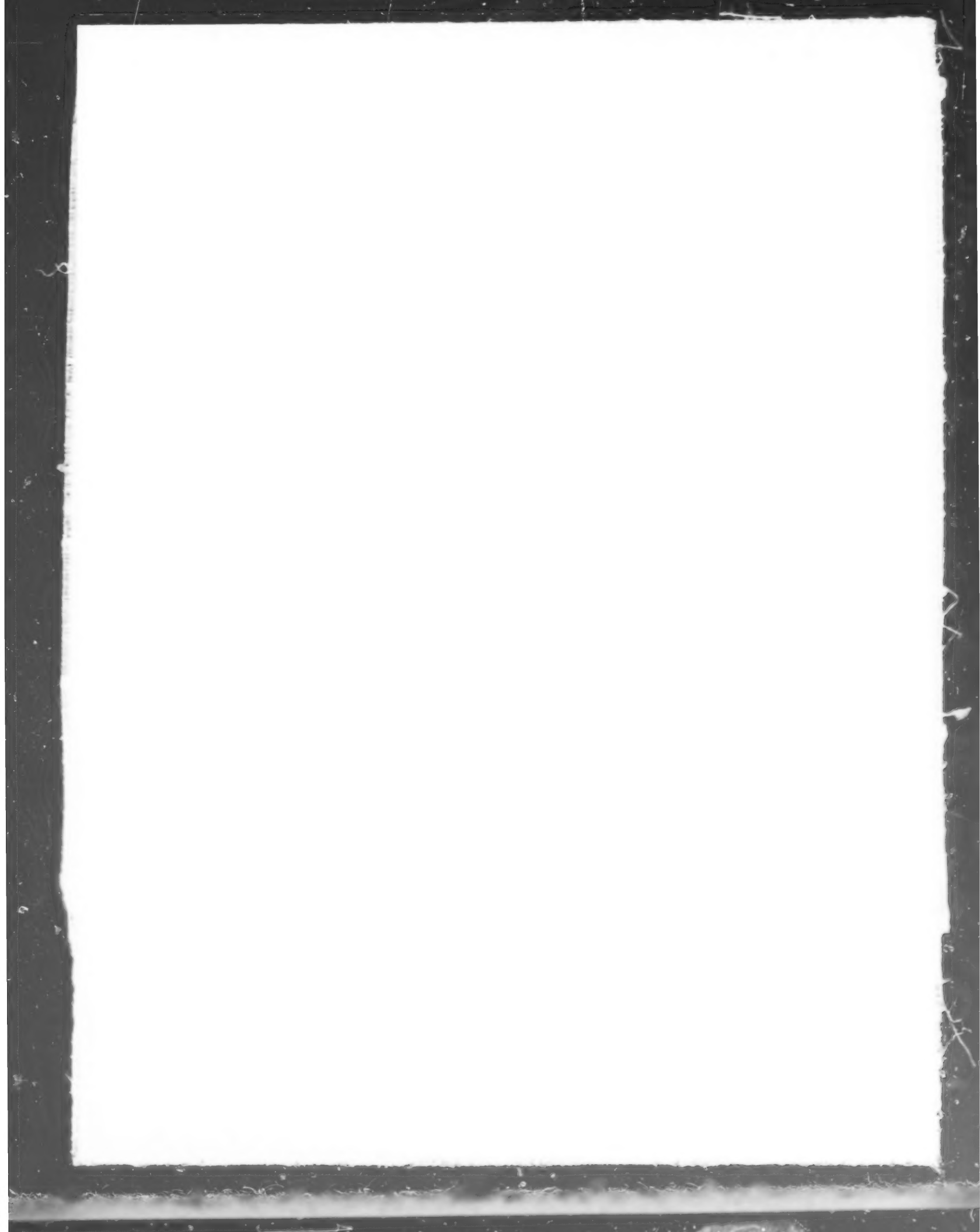
\*\*\*\* All of the financial arrangements exclude ground-water restoration.

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FINANCIAL ASSURANCE ARRANGEMENTS FOR MILLS LICENSED BY NRC (cont'd)

| <u>Facility</u>                                            | <u>Type</u>                                                                                                                  | <u>Amount***</u>            | <u>Issued To</u> | <u>NRC Review Date</u> | <u>Purpose****</u>                                         | <u>Actions Still Outstanding</u> |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------|------------------------|------------------------------------------------------------|----------------------------------|
| Pathfinder Mines<br>Snirley Basin,<br>Wyoming              | Self*<br>Bond                                                                                                                | 52,000,000                  | Wyoming          |                        | Decommissioning<br>and Reclamation<br>(including the mine) |                                  |
|                                                            | Letter<br>of Credit                                                                                                          | 5,518,300                   | NRC              | 12/1984                | Decommissioning<br>and Reclamation                         |                                  |
| Petrotomics Co.<br>Shirley Basin,<br>Wyoming               | Self*<br>Bond                                                                                                                | 1,928,859<br>(51,980,157)   | Wyoming          | 2/1982                 | Decommissioning<br>and Reclamation                         |                                  |
| Plateau Resources<br>Shootaring Canyon,<br>Utah            | Letter<br>of<br>Credit                                                                                                       | 1,827,601                   | NRC              | 1/1985                 | Tailings reclamation<br>and mill decommissioning           | Completed                        |
| Rio Algom<br>La Sal, Utah                                  | Escrow<br>account                                                                                                            | 535,874                     | Utah             | 1/1982                 | Mine, mill and<br>tailings decommission-<br>ing            |                                  |
| Silver King Mines<br>Converse County,<br>Wyoming           | No bond in effect due to no facilities being built.                                                                          |                             |                  |                        |                                                            |                                  |
| Tennessee Valley<br>Authority<br>Edgemont,<br>South Dakota | None. Government agency - TVA has committed to decommissioning and reclamation. They are currently decommissioning the mill. |                             |                  |                        |                                                            |                                  |
| Umetco<br>Gas Hills, Wyoming                               | Surety<br>Bond                                                                                                               | 5,929,000<br>(10,239,500)   |                  | 1983                   | Decommissioning<br>Reclamation                             |                                  |
| Western Nuclear<br>Inc.<br>Jeffrey City,<br>Wyoming        | Surety<br>Bond                                                                                                               | (10,586,000)<br>19,244,975) | Wyoming          | 6/1982                 | Decommissioning<br>and Reclamation                         |                                  |

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# STATUS OF CONVENTIONAL URANIUM MILLS LICENSED BY STATE OF COLORADO

| <u>Facility</u>                  | <u>License No.</u> | <u>Date of<br/>Initial<br/>Issuance</u> | <u>Date of<br/>Last<br/>Renewal</u> | <u>Date<br/>License<br/>Expires</u> | <u>Mill<br/>Operating<br/>Status *</u> | <u>Mill<br/>Tailings<br/>Volumes***</u> | <u>Parent Company</u> |
|----------------------------------|--------------------|-----------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------------------|-----------------------|
| Cotter Corp.<br>(Canon City)     | CO-369-015         | 1958                                    | 08/79                               | 08/84**                             | 15(02/85)                              | 2.5 (0.3/2.2)                           | Commonwealth Edison   |
| Umetco Minerals<br>(Uravan Mill) | SUA-673            | 1948                                    | 06/70                               | 06/75**                             | 15(11/83)                              | 10.5 (5.7/4.8)                          | Union Carbide Corp.   |

\* 15 - Indefinite Shutdown

\*\* Under timely renewal

\*\*\* Volumes are in 10<sup>6</sup> metric tons - Total (AEC/Private)

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# FINANCIAL ASSURANCE ARRANGEMENTS FOR MILLS LICENSED BY STATE OF COLORADO

| <u>Facility</u>                  | <u>Type</u>                         | <u>Amount*</u> | <u>Issued To</u> | <u>Review Date</u> | <u>Purpose**</u>                                          | <u>Actions Still Outstanding</u> |
|----------------------------------|-------------------------------------|----------------|------------------|--------------------|-----------------------------------------------------------|----------------------------------|
| Cotter Corp.<br>(Canon City)     | Perfor-<br>mance Bond               | 10,500,000     | State            | 8/1979             | Reclamation,<br>Decommissioning,<br>and long-term<br>care | Completed                        |
|                                  | Security<br>Assessment              | 68,000         | State            |                    |                                                           |                                  |
|                                  | Money<br>Escrow                     | 329,383        | State            |                    |                                                           |                                  |
| Umetco Minerals<br>(Uravan Mill) | Finan-<br>cial<br>Assurance<br>Test | 31,686,000     | State            | 9/1981             | Reclamation<br>and decommissioning                        |                                  |

\* Amount estimates do not include the time value of money.

\*\* All the financial arrangements exclude ground-water restoration.

## STATUS OF CONVENTIONAL URANIUM MILLS LICENSED BY STATE OF NEW MEXICO

| <u>Facility</u>                          | <u>License No.</u> | <u>Date of<br/>Initial<br/>Issuance</u> | <u>Date of<br/>Last<br/>Renewal</u> | <u>Date<br/>License<br/>Expires</u> | <u>Mill<br/>Operating<br/>Status *</u> | <u>Mill<br/>Tailings<br/>Volumes***</u> | <u>Parent Company</u> |
|------------------------------------------|--------------------|-----------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------------------|-----------------------|
| Anaconda<br>(Bluewater)                  | SUA-647            | 1959                                    | 1971                                | 1976**                              | IS(00/83)                              | 24.0 (8.8/15.8)                         | Atlantic Richfield    |
| Homestake Mining                         | SUA-708            | 1958                                    | 1971                                | 1976**                              | IS(03/85)                              | 22.0(11.4/10.6)                         | Homestake Mining Co.  |
| Kennecott Minerals<br>(L-Bar)            | NM-SOH-ML-IR-03    | 1974                                    | 1982                                | 1987                                | IS(00/82)                              | 3.3                                     | SOHIO Reserve         |
| Quivira Mining<br>(Ambrosia Lake)        | SUA-616            | 1958                                    | 1971                                | 1976**                              | IS(02/85)                              | 33.0(10./23.0)                          | Kerr McGee Corp.      |
| Bokum Resources<br>Corp. (Marquez)       | NM-BRC-ML-00       | 1981                                    | -                                   | -                                   | NB                                     | -                                       | Bokum Resources       |
| United Nuclear<br>Corp.<br>(Church Rock) | NM-UNC-ML-18       | 1977                                    | -                                   | 1982**                              | IS(08/79)                              | 3.6                                     | United Nuclear Corp.  |
| Gulf Minerals                            | NM-GUL-MI-00       | 1981                                    | -                                   | -                                   | NB                                     | -                                       | Gulf Minerals         |

\* IS - Indefinite Shutdown

NB - Never Built

\*\* Under timely renewal

\*\*\* Volumes are in 10<sup>6</sup> metric tons - Total (AEC/Private)



FINANCIAL ASSURANCE ARRANGEMENTS FOR MILLS LICENSED BY STATE OF NEW MEXICO

| <u>Facility</u>                          | <u>Type</u>                    | <u>Amount*</u> | <u>Issued To</u> | <u>Review Date</u> | <u>Purpose**</u> | <u>Actions Still Outstanding</u>                              |
|------------------------------------------|--------------------------------|----------------|------------------|--------------------|------------------|---------------------------------------------------------------|
| Anaconda<br>(Bluewater)                  | Bond                           | 8,625,000      | State            | 1/1982             | Reclamation      |                                                               |
|                                          | Escrow                         | 1,000,000      | State            |                    | Long term care   |                                                               |
| Homestake Mining                         | Finan-<br>cial Test            | 4,252,750      | State            | 4/1982             | Reclamation      |                                                               |
|                                          | Escrow                         | 1,000,000      | State            |                    | Long term care   |                                                               |
| Kennebecott<br>Minerals (L-Bar)          | Bond                           | 10,950,000     | State            | 7/1983             | Reclamation      | Completed                                                     |
|                                          | Escrow                         | 246,390        | State            |                    | Long term care   |                                                               |
| Quivira<br>(Ambrosia Lake)               | Finan-<br>cial Test            | 8,200,000      | State            | 1/1982             | Reclamation      |                                                               |
|                                          | Escrow                         | 1,000,000      | State            |                    | Long term care   |                                                               |
| Bokum Resources<br>Corp. (Marquez)       | NONE (mill was never operated) |                |                  |                    |                  | In order to operate,<br>they will have to<br>obtain a surety. |
| United Nuclear<br>Corp.<br>(Church Rock) | Finan-<br>cial Test            | 2,500,000      | State            | 1/1982             | Reclamation      |                                                               |
|                                          | Escrow                         | 703,797        | State            |                    | Long term care   |                                                               |
| Gulf Minerals                            | NONE (mill was never built)    |                |                  |                    |                  |                                                               |

\* Amount estimates do not include the time value of money.

\*\* All of the financial arrangements exclude ground-water restoration.

## STATUS OF CONVENTIONAL URANIUM MILLS LICENSED BY STATE OF TEXAS

| <u>Facility</u>                               | <u>License No.</u> | <u>Date of<br/>Initial<br/>Issuance</u> | <u>Date of<br/>Last<br/>Renewal</u> | <u>Date<br/>License<br/>Expires</u> | <u>Mill<br/>Operating<br/>Status *</u> | <u>Mill<br/>Tailings<br/>Volumes***</u> | <u>Parent Company</u> |
|-----------------------------------------------|--------------------|-----------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------------------|-----------------------|
| Anaconda Minerals<br>(Rhode Ranch)            | 8-3304             | 1982                                    | -                                   | -                                   | NB                                     |                                         | Atlantic Richfield    |
| Chevron Resources<br>(Panna Maria Mill)       | 9-2402             | 1977                                    | -                                   | 09/80**                             | IS(06/85)                              | 4.2                                     | Standard Oil of Cal.  |
| Conoco-Pioneer<br>Nuclear<br>(Conquista Mill) | 9-1634             | 1971                                    | 05/78                               | 09/80**                             | DR(00/83)                              | 8.7                                     | Dupont                |
| Exxon Minerals Co.<br>(Exxon Felder)          | 8-1431             | 1970                                    | 09/73                               | 09/82**                             | DR(00/80)                              | 0.5                                     | Exxon Corp.           |

\* OP - Operating  
 NB - Never Built  
 IS - Indefinite Shutdown  
 DR - Decommissioning Reclamation  
 \*\* Under timely renewal  
 \*\*\* Volumes are in 10<sup>6</sup> metric tons.

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FINANCIAL ASSURANCE ARRANGEMENTS FOR MILLS LICENSED BY STATE OF TEXAS

| <u>Facility</u>                         | <u>Type</u>         | <u>Amount*</u> | <u>Issued To</u> | <u>Review Date</u> | <u>Purpose**</u>               | <u>Actions Still Outstanding</u> |
|-----------------------------------------|---------------------|----------------|------------------|--------------------|--------------------------------|----------------------------------|
| Anaconda Minerals<br>(Rhode Ranch)      | Under Negotiation   |                |                  |                    |                                |                                  |
| Chevron Resources<br>(Panna Maria Mill) | Corporate Guarantee | 3,289,900      | State (BRH)      | 4/1982             | Reclamation and perpetual care | Currently requesting updates.    |
| Conoco, Inc.<br>(Conquista Mill)        | Performance Bond    | 8,050,000      | State (BRH)      | 7/1982             | Reclamation and perpetual care | Currently requesting updates.    |
| Exxon Minerals<br>(Exxon Felder)        | Corporate Guarantee | 3,000,000      | State (BRH)      | 4/1982             | Reclamation and perpetual care | Currently requesting updates.    |

\* Amount estimates do not include the time value of money.

\*\* All of the financial arrangements exclude ground-water restoration.

STATUS OF CONVENTIONAL URANIUM MILLS LICENSED BY STATE OF WASHINGTON

| <u>Facility</u>                     | <u>License No.</u> | <u>Date of<br/>Initial<br/>Issuance</u> | <u>Date of<br/>Last<br/>Renewal</u> | <u>Date<br/>License<br/>Expires</u> | <u>Mill<br/>Operating<br/>Status *</u> | <u>Mill<br/>Tailings<br/>Volumes***</u> | <u>Parent Company</u>                        |
|-------------------------------------|--------------------|-----------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------------|
| Dawn Mining<br>(Ford Mill)          | WN-1043-2          | 1957                                    | 07/74                               | 07/79**                             | IS(12/83)                              | 2.9 (1.1/1.8)                           | Newmont Mining Corp.<br>Midnight Mines, Inc. |
| Joy Mining Co.                      | WN-10220-1         | 1983                                    | -                                   | 06/85                               | LS(06/85)                              | 0.003                                   | Joy Mining Co.                               |
| Western Nuclear,<br>Inc. (Sherwood) | WN-10133-1         | 1978                                    | -                                   | 04/80**                             | IS(07/84)                              | 2.3                                     | Phelps Dodge Corp.                           |

\* IS - Indefinite Shutdown      LS - License Suspended

\*\* Under timely renewal

\*\*\* Volumes are in 10<sup>6</sup> metric tons \_ Total (AEC/Private)

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# FINANCIAL ASSURANCE ARRANGEMENTS FOR MILLS LICENSED BY STATE OF WASHINGTON

| <u>Facility</u>                               | <u>Type</u>              | <u>Amount*</u>           | <u>Issued To</u>                            | <u>Review Date</u> | <u>Purpose**</u>                                                | <u>Actions Still Outstanding</u>                                                                                                                        |
|-----------------------------------------------|--------------------------|--------------------------|---------------------------------------------|--------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dawn Mining Co.<br>(Ford Mill)                | Letter of<br>Credit      | 1,000,000<br>(1,500,000) | State<br>(D.S.H.S.)<br>under review         | 11/5/82            | Decommissioning<br>and Reclamation                              | Surety on an interim<br>basis for tailing<br>impoundment 4. To be<br>reevaluated at time of<br>renewal to cover<br>commercial tailings pond<br>3 and 4. |
| Joy Mining Co.<br>(Flodelle Creek<br>Project) | Perfor-<br>mance<br>Bond | 93,000                   | State<br>(D.S.H.S.)                         | 8/24/83            | Mill decommis-<br>sioning return of<br>tailings to mine<br>site | State is in the process<br>of terminating the<br>license due to licensee<br>failure to pay licensing<br>and inspection fees.                            |
|                                               |                          | 25,000<br>(D.N.R.)       | State                                       | 8/24/83            | Reclamation of<br>of other mine areas                           |                                                                                                                                                         |
| Western Nuclear,<br>Inc. (Sherwood)           | Perfor-<br>mance<br>Bond | 6,000,000                | Bureau of<br>Indian Affairs<br>(U.S.D.O.I.) | 4/24/78            | Reclamation                                                     | Surety is tied into<br>lease of the Indian<br>lands.                                                                                                    |

\* Amount estimates do not include the time value of money.

\*\* All of the financial arrangements exclude ground-water restoration.

Statement by Senator Orrin Hatch  
for the Joint Hearing before the  
Energy Research and Development Subcommittee  
of the Senate Energy Committee and  
the Energy and Environment Subcommittee  
of the House Interior and Insular Affairs Committee  
on S. 1004 and H.R. 2234

*Hatch*  
*"Live"*

Mr. Chairman, I am pleased to support and to co-sponsor S. 1004. This bill, along with its House companion measure addresses a problem left over from the adoption of the Uranium Mill Tailings Radiation Control Act of 1978: namely, the equitable allocation of remedial action expenses for sites currently under an NRC license. Roughly 30% of the tailings at those sites were produced under contract with the Atomic Energy Commission. If the AEC had been aware that extensive reclamation would be required for such tailings, it would have provided reimbursement for such. But such recognition was not forthcoming until after the close of the contract period in the 1970's. Similarly, nuclear utilities should bear a fair share of the reclamation expenses for existing tailings, the bulk of which result from contracts negotiated before there was recognition of the extensive reclamation which would be required. Adoption of this legislation may also assist in restoring some vitality to our severely depressed domestic uranium industry, particularly if coupled to appropriate changes to Department of Energy uranium enrichment policies and meaningful implementation of section 161(v) of the Atomic Energy Act.

Mr. Chairman, the proposed legislation enjoys the support of my State as well as important producers within the State. I am attaching copies of letters from Governor Bangerter and from Mr. Farley, the President of Atlas Corporation, a Moab uranium milling company. I hope and understand that the concerns expressed in these letters will receive the most careful consideration.



NORMAN M. SANDGATER  
GOVERNOR

STATE OF UTAH  
OFFICE OF THE GOVERNOR  
SALT LAKE CITY  
84114

July 15, 1985

The Honorable Morris Udall  
United States House of Representatives  
Cannon House Office Building, #235  
Washington, D.C. 20519

Dear Representative Udall:

This letter is for the record of the hearing scheduled for July 16, 1984, relating to S. 1004 and H.R. 2236, two nearly identical bills which would provide a financial mechanism for funding the cleanup of uranium mill tailings at so called "active" uranium processing sites.

The bills, as we understand them, do not alter existing health and safety standards. Rather, they simply provide for the Department of Energy (DOE), or its designees, to undertake and complete reclamation activities. Uranium mill operators would be financially responsible for all future tailings. However, as to existing active tailings sites, liability would be split three ways. The first share, some 30 percent, would be supplied by nuclear utilities, the federal government's share would be 55 percent. The remaining share, some 15 percent, would be supplied by the uranium companies.

Utah supports the basic allocation of financial responsibility provided in the bill. Roughly 30 percent of the tailings at active sites are associated with uranium produced for the former Atomic Energy Commission (AEC), under old government procurement contracts. The basic intent of the contracts was to cover costs and to return a reasonable profit. Had the AEC known that extensive stabilization of tailings would one day have been required, it would have provided reimbursement for such; as it is, it did not. Congress has provided for 90 percent federal liability at "inactive" uranium sites under Title I of the Uranium Mill Tailings Radiation Control Act. Virtually all the uranium at these sites was produced for the AEC and we assume that was why the federal government agreed to its share. It is inequitable for federal authorities not to fund their prorate share at active processing sites.



The 55 percent share for the nuclear utilities has a related rationale: The nuclear utilities benefited from the remaining uranium produced at the sites; the beneficiaries of the uranium should bear the disposal expenses. Again, had the parties been aware of the expenses involved, some provision would have been made for sharing, particularly in the "seller's market" of the 1970's. We are, of course, concerned that the costs to utility ratepayers be minimized, but the amounts involved should have a trivial impact.

There is another basic reason for adoption of a sharing mechanism; that is the basic viability of the domestic uranium industry. The industry faces an enormous stabilization expense but is enjoying no new contracts as domestic utilities procure virtually all their new requirements off-shore. At the same time, foreign procedures are enjoying government supports and subsidies which allow and encourage them to undersell our industry. Adoption of the funding mechanism proposed in S. 1004 and H.R. 2236 may assist in preserving our uranium industry and thus further our goals of energy independence and national security. We have previously indicated that Congress should take action in that regard, and we are hopeful that measures will also be adopted to address the adverse impacts on the industry of current DOE uranium enrichment policies as well as the dumping of foreign uranium.

We do have a significant concern with the bill. Given our state's experience with DOE's administration of the inactive site cleanup effort, we feel that the program as administered by the agency may be unnecessarily expensive. For example, Utah's approach to the Vitro site in Salt Lake City is significantly less costly than similar work contemplated by DOE. Accordingly we believe that each state should have the option of administering the program within its borders. Specific language should be included to allow: state contracts with DOE for program operation; state reimbursement from DOE for state operated programs; vicinity property cleanup identifying owner financial responsibility; a definition of precisely what constitutes permanent cessation of operations and adoption of Environmental Protection Agency or Nuclear Regulatory Commission standards for remedial works to prevent use of less restrictive state standards that may be adopted or in place.

Sincerely,

(s)

Norman H. Bangarter  
Governor

cc: Utah Congressional Delegation

Testimony for the Record  
from

**THE HONORABLE ED HERSCHLER**  
Governor of Wyoming

before the  
joint hearing of

The House Committee  
on Interior and Insular Affairs  
and  
The Senate Committee on  
Energy and Natural Resources

concerning

Reclamation of Uranium Mill Tailings  
at  
Active Uranium and Thorium Processing Sites  
H.R. 2236 and S. 1004

I very much appreciate this opportunity to supplement the record of the joint hearing held by the House Committee on Interior and Insular Affairs and the Senate Committee on Energy and Natural Resources, concerning two bills, H.R. 2236 and S. 1004, which would establish a system for financing the reclamation of uranium mill tailings at active uranium and thorium processing sites regulated under title II of the Uranium Mill Tailings Radiation Control Act of 1978.

I would like to go on record in support of the concept embodied in H.R. 2236 and S. 1004. This nation desperately needs to recognize the seriously depressed condition of our domestic uranium industry, and how that condition affects our national security, our energy independence, and our environment.

The bills under consideration by the two committees help focus attention toward these depressed conditions. They also offer an important promise to the industry and the nation -- that the domestic uranium industry which is necessary to meet critical, national energy and security needs, will not be abandoned to become extinct.

The declining condition of the uranium industry is all too apparent and painful to Wyoming. Uranium ore has been mined in the State for over thirty years, with the first extraccion of 5,156 tons of ore in 1953. Twenty-five years later in 1978, Wyoming hit its peak production level of 5,517,070 tons of ore. This production generated a healthy employment level of 5,400 workers in early 1980, and commanded prices in the spot market of \$40 per pound.

At the end of 1980, the price of uranium began a deep decline and hit bottom in 1984 at \$17.50 per pound. The current market price is approximately \$21.25 per pound (reflecting a reduction in stock piles due to mine closures, rather than any increase in real demand).

Uranium production has also declined dramatically. As the attached chart shows, production for 1985 is projected to drop below one million tons, with further reductions projected through 1988. This is much below early predictions of the uranium decline. A report delivered to me by Wyoming producers in October, 1981, projected that production would stabilize at about 4 million tons to meet present contracts. Clearly, the "contracts" were not worth much more than the paper they were written on, and no more than the value of domestic uranium today.

This production decline has seriously affected employment levels. From 19 operations employing over 5,400 workers in early 1980, the industry has shrunk to 4 operations employing about 590 workers. Tax revenues have also shrunk. The attached chart reflects the dramatic decline in property and severance tax receipts, which go to support schools, highways and state and local services and facilities.

The bleak condition is painful for the State and its communities, businesses, and citizens. We are also very much aware that New Mexico, the only state which exceeded us in uranium production during the peak years, is now out of the uranium business altogether. We desperately do not want to find ourselves in this same condition, foreclosing the nation's domestic nuclear opportunity for the distant future.

So -- what can be done that might help? I strongly believe that the proposals to fund reclamation at active mill tailings sites represent an important offer of national assistance to a truly important, but failing industry. In short, the proposal seems fair and reliable, and advances the important goal ensuring timely and complete reclamation at active uranium mill tailings sites.

The shared financial approach described in the bills seems equitable. Roughly thirty percent of the volume of tailings to be reclaimed are the result of government purchases by the Atomic Energy Commission for defense programs. While the basic intent of the old government procurement contracts was to cover costs and provide for a reasonable profit, the contracts did not reimburse for the comprehensive environmental reclamation now required under current regulations. The federal government should meet its legitimate financial responsibility for this reclamation.

The 55 percent share from nuclear utilities also is justified. Ratepayers, whose electricity derives from nuclear power reactors, have benefited from uranium as a relatively inexpensive and extremely efficient fuel source. Just 8 ounces of yellowcake can supply all the household electrical energy needs of an average family for a full year (8,000 kwh). This 8 ounces of yellowcake compares to 600 gallons of oil and 6,000 pounds of coal for equivalent energy production. Furthermore, using uranium to generate electricity saves other fuel sources for uses to which they may be uniquely suited. Petroleum, for example, is used to make gasoline, plastics, medicines, and fertilizers.

Inasmuch as nuclear utilities and their customers benefitted from the uranium production, they should bear a portion of the disposal costs. As with the federal government, had the parties been aware of the expenses which would be involved in mill tailings reclamation, some provision would have been made relating to the costs.

As it is, the so-called "contracts" do not even commit to a firm quantity of uranium for purchase, let alone prices or expenses. This situation leaves our uranium producers facing high costs for mine stabilization and monitoring, and even higher costs for full reclamation. This comes at a time when virtually all new utility contracts are with foreign producers for uranium produced under heavy government support or subsidy.

The shared funding approach is not only fair, but it offers the only reliable mechanism for timely reclamation at active mill tailings sites. By its own enactment, Congress recognized that mill tailings "may pose a potential and significant radiation health hazard to the public...and...every reasonable effort should be made to provide for stabilization, disposal, and control in a safe and environmentally sound manner...." Uranium Mill Tailings Radiation Control Act of 1978.

The deteriorating financial condition of the uranium industry threatens to delay (or indefinitely postpone) final reclamation at many tailings sites. This reclamation deferral continues the potential hazard associated with radiation and groundwater contamination. It also increases the risk that exposed and spilled tailings will introduce heavy metals, suspended solids, radioactive contaminants, and soluble salts to nearby surface waters and lands.

Windblown tailings have the potential to diminish the capacity of soil to support vegetation and could result in vegetation which is toxic to grazing animals. Finally, unreclaimed sites are nothing more than areas which cannot support any other land use besides a restricted toxic waste dump. This is an unacceptable long-term use of land in Wyoming or any other state.

One additional, important benefit from the reclamation program is the employment and revenue increases, which would help our depressed uranium areas survive their current economic downturn. Local contractors could easily be selected to perform the reclamation work, given their location and experience with uranium production. Equipment and supplies would also be available in these areas. This "human factor"



is important with any federal program or project, and it should not be neglected where areas such as ours face severely depressed economic conditions.

These points are all in support of the concept proposed in H.R. 2236 and S. 1004. However, I do have some concerns with the bills:

-- Given Wyoming's experience with the Department of Energy (DOE) and its administration of the inactive site cleanup effort, we have become convinced that DOE's approach to anything is unnecessarily expensive. I would encourage Congress to include broad delegation provisions in the bill, allowing states or companies to assume the responsibility of reclamation with reimbursement from DOE (and minimal federal "red-tape").

-- I would hope that certain federal requirements which just increase costs could be exempted. These are all licensed sites with approved reclamation plans. Certainly, the National Environmental Policy Act (in addition to other federal laws which apply to "federal actions"), should be excluded from application.

-- State standards, which are now applicable to these sites, should remain applicable throughout the reclamation work, including bonding requirements and environmental standards, regardless of any discontinuance agreement under section 274 of the Atomic Energy Act. These should be applicable, even if they are more stringent than standards established by NRC or EPA.

-- Certain ambiguous words and phrases should be clarified. I do not like the phrase "consult, as appropriate," when the state is involved with a permit for the site. I also question when "permanent cessation of operations" begins for the initiation of reclamation. These areas should be clarified in the bill and not left for eventual dispute and delay by the parties.

Thank you for considering my remarks and recommendations on the important issues relating to uranium production and mill tailings reclamation. Again, I support the two bills before your committees, and I would encourage your favorable consideration and action.

ATTACHMENT A:

**Excerpts from**  
**TAXES ON WYOMING'S MINERALS**  
**HISTORY & PROJECTIONS**  
**Management Council**  
**October - 1984**

**URANIUM PRODUCTION AND VALUATION**

| <u>Calendar<br/>Year<br/>Produced</u> | <u>Production<br/>(Tons)</u> | <u>Value/ton</u> | <u>In Situ<br/>Value</u> |
|---------------------------------------|------------------------------|------------------|--------------------------|
| 1979*                                 | 5,512,345                    | \$12.57          |                          |
| 1980*                                 | 5,352,337                    | 15.13            | \$ 909,289               |
| 1981*                                 | 4,560,677                    | 16.84            | 449,054                  |
| 1982*                                 | 2,100,162                    | 21.39            | 381,762                  |
| 1983                                  | 3,049,068                    | 16.67            | 247,750                  |
| 1984                                  | 1,600,000                    | 20.20            | 200,000                  |
| 1985                                  | 900,000                      | 20.20            | 200,000                  |
| 1986                                  | 850,000                      | 20.20            | 200,000                  |
| 1987                                  | 700,000                      | 20.60            | 200,000                  |
| 1988                                  | 650,000                      | 21.00            | 200,000                  |

BEST COPY AVAILABLE

Employment Levels of Wyoming Uranium Producers

| <u>Project Location</u>                     | <u>Mar</u><br><u>1980</u> | <u>Dec</u><br><u>1980</u> | <u>Dec</u><br><u>1981</u> | <u>Dec</u><br><u>1982</u> | <u>July</u><br><u>1983</u> | <u>July</u><br><u>1983</u> | <u>Current Mine</u><br><u>Permit Status</u> |
|---------------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|---------------------------------------------|
| American Nuclear<br>Casper                  | 74                        | 64                        | 41                        | 30                        | 14                         | 12                         | Inactive                                    |
| Bear Creek Uranium<br>Casper                | 296                       | 258                       | 231                       | 213                       | 204                        | 147                        | Active                                      |
| Cleveland Cliffs<br>Casper                  | 46                        | 52                        | 39                        | 13                        | 8                          | 2                          | Inactive                                    |
| Energy Fuels Nuclear<br>Gas Hills           | 50                        | 46                        | 46                        | 2                         | 1                          | 1                          | Inactive                                    |
| Exxon Highland<br>Casper                    | 646                       | 612                       | 310                       | 126                       | 97                         | 5                          | Reclamation & Monitoring                    |
| Federal-American<br>Partners, Gas Hills*    | 523                       | 342                       | 65                        | 31                        | 32                         | 0                          | Went Out of Business                        |
| Gatty Petrochemicals<br>Shirley Basin       | 547                       | 506                       | 181                       | 142                       | 136                        | 100                        | Reclamation & Monitoring                    |
| Harr-McGee Nuclear<br>S. Powder River Basin | 97                        | 36                        | 25                        | 19                        | 19                         | 19                         | Standby                                     |
| Minerals Exploration<br>Rawlins             | 236                       | 267                       | 257                       | 213                       | 32                         | 6                          | Standby                                     |
| Nine Mile Lake<br>Casper                    | 53                        | 47                        | 20                        | 3                         | 1                          | 1                          | Reclamation & Monitoring                    |
| OPI-Western, Inc.<br>Casper                 | 18                        | 20                        | 32                        | 10                        | 6                          | 4                          | Standby                                     |
| Pathfinder-Big Eagle<br>Jeffrey City        | 326                       | 143                       | 41                        | 39                        | 14                         | 6                          | Reclamation & Maintenance                   |
| Pathfinder-Expl. & Dev.<br>Riverton         | 44                        | 30                        | 17                        | 20                        | 20                         | 6                          | Active (Exploration and<br>Evaluation)      |
| Pathfinder-Lucky Mc<br>Gas Hills            | 676                       | 333                       | 247                       | 220                       | 242                        | 67                         | Active                                      |
| Pathfinder-Shirley Basin<br>Shirley Basin   | 572                       | 490                       | 348                       | 244                       | 211                        | 150                        | Active                                      |
| Silver King Mines<br>Casper                 | 196                       | 78                        | 56                        | 37                        | 39                         | 14                         | Standby                                     |
| Union Carbide<br>Gas Hills                  | 222                       | 196                       | 180                       | 130                       | 145                        | 18                         | Reclamation & Monitoring                    |
| United Nuclear-Teton<br>Casper†             | 29                        | 36                        | 4                         | 0                         | 0                          | 1                          | Reclamation & Decommissioning               |
| Uranium Supply Service<br>Shirley Basin     | 110                       | 60                        | 0                         | 0                         | 0                          | 0                          | Reclamation                                 |
| Western Nuclear<br>Jeffrey City‡            | 606                       | 410                       | 88                        | 45                        | 47                         | 23                         | Standby & Monitoring                        |
| Wyoming Minerals<br>Buffalo                 | 82                        | 71                        | 8                         | 6                         | 6                          | 8                          | Restoration & Monitoring                    |
| Totals                                      | 5449                      | 4117                      | 2256                      | 1543                      | 1274                       | 590                        |                                             |

\* Out of business

† Consultant for reclamation

‡ Includes 8 personnel at Riverton Acid Plant

Excerpts from  
TAXES ON WYOMING'S MINERALS  
HISTORY & PROJECTIONS  
Management Council  
October - 1984

URANIUM PROPERTY TAXES - ACTUAL & ESTIMATED

| PRODUCED<br>IN<br>CALENDAR<br>YEAR | RECEIVED<br>IN<br>FISCAL<br>YEAR | VALUATION     | AVERAGE<br>MILL<br>LEVY | PROPERTY<br>TAXES |
|------------------------------------|----------------------------------|---------------|-------------------------|-------------------|
| 1979                               | 1981                             | \$ 69,290,431 | 66.378                  | \$ 4,599,360      |
| 1980                               | 1982                             | 80,981,002    | 66.773                  | 5,407,377         |
| 1981                               | 1983                             | 77,239,481    | 63.205                  | 4,881,942         |
| 1982                               | 1984                             | 45,555,994    | 64.351                  | 2,931,559         |
| 1983                               | 1985                             | 50,837,054    | 65.181                  | 3,313,587         |
| 1984                               | 1986                             | 32,520,000    | 65.000                  | 2,113,800         |
| 1985                               | 1987                             | 18,380,000    | 65.000                  | 1,194,700         |
| 1986                               | 1988                             | 17,370,000    | 65.000                  | 1,129,050         |
| 1987                               | 1989                             | 14,620,000    | 65.000                  | 950,300           |
| 1988                               | 1990                             | 13,850,000    | 65.000                  | 900,250           |

URANIUM SEVERANCE TAXES - ACTUAL & ESTIMATED

| PRODUCED<br>IN CALENDAR<br>YEAR | RECEIVED<br>IN FISCAL<br>YEAR | VALUATION     | SEVERANCE<br>TAX<br>RATE | TOTAL<br>SEVERANCE<br>TAXES |
|---------------------------------|-------------------------------|---------------|--------------------------|-----------------------------|
| 1978                            | 1980                          | \$ 73,196,538 | 5.5%                     | \$ 4,025,810*               |
| 1979                            | 1981                          | 69,290,431    | 5.5%                     | 3,810,974*                  |
| 1981                            | 1982                          | 77,239,481    | 5.5%                     | 4,248,171*                  |
| 1982                            | 1983                          | 45,555,994    | 5.5%                     | 2,505,580*                  |
| 1983                            | 1984                          | 50,837,054    | 5.5%                     | 2,796,038*                  |
| 1984                            | 1985                          | 32,520,000    | 5.5%                     | 1,788,600                   |
| 1985                            | 1986                          | 18,380,000    | 5.5%                     | 1,010,900                   |
| 1986                            | 1987                          | 17,370,000    | 5.5%                     | 955,350                     |
| 1987                            | 1988                          | 14,620,000    | 5.5%                     | 804,100                     |
| 1988                            | 1989                          | 13,850,000    | 5.5%                     | 761,750                     |

\*Actual levied